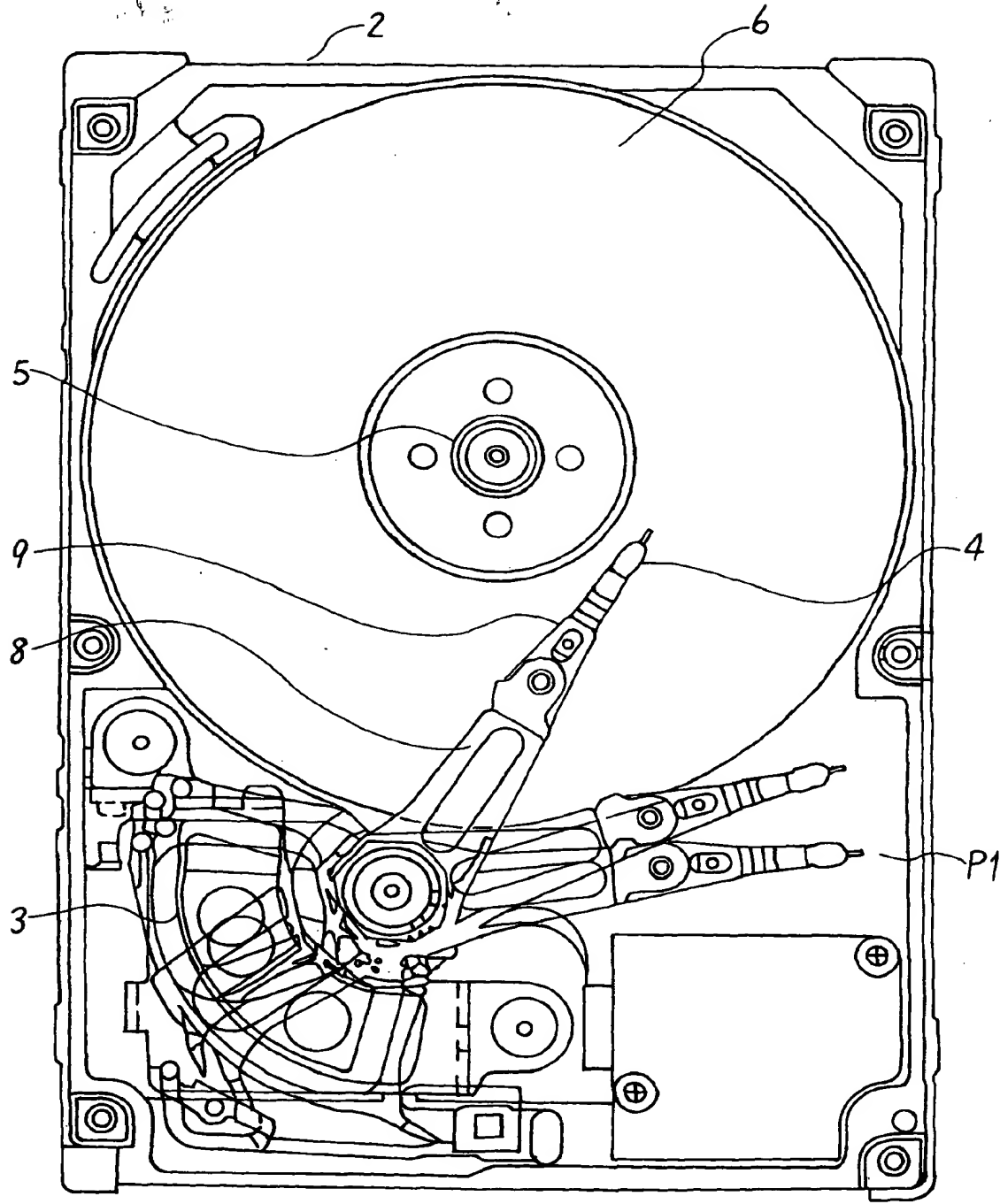


APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

HEAD POSITIONING CONTROL METHOD
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 1 of 47

FIG. 1



009111 8/55 F/60

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

HEAD POSITIONING CONTROL METHOD...

Takahiko Takaishi

Greer, Burns & Crain, Ltd. (James Folker)

Ref. No. 3408.64941

(312) 360 0080

Sheet 2 of 47

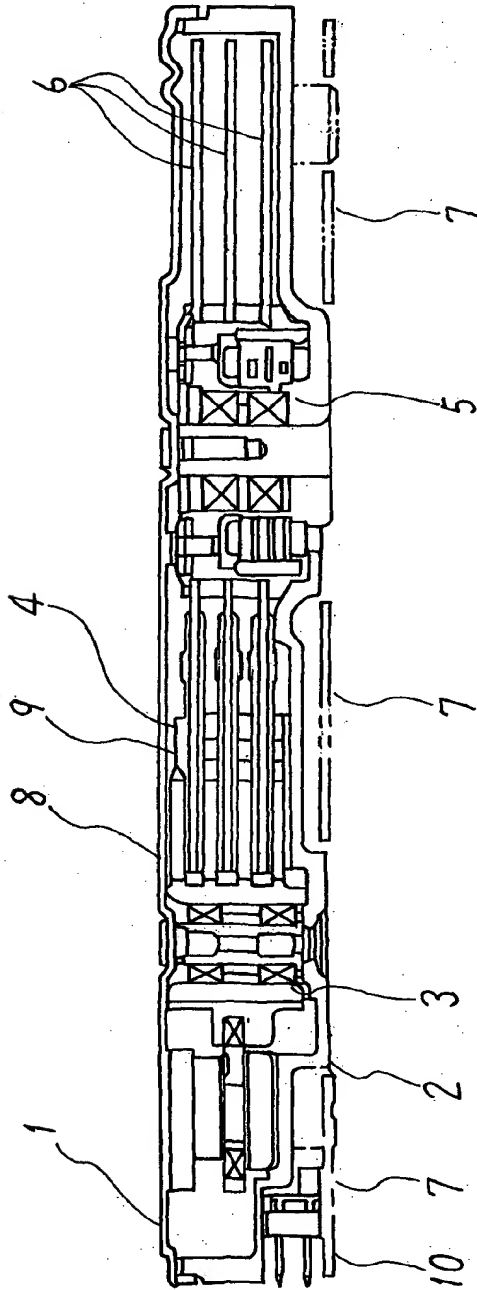


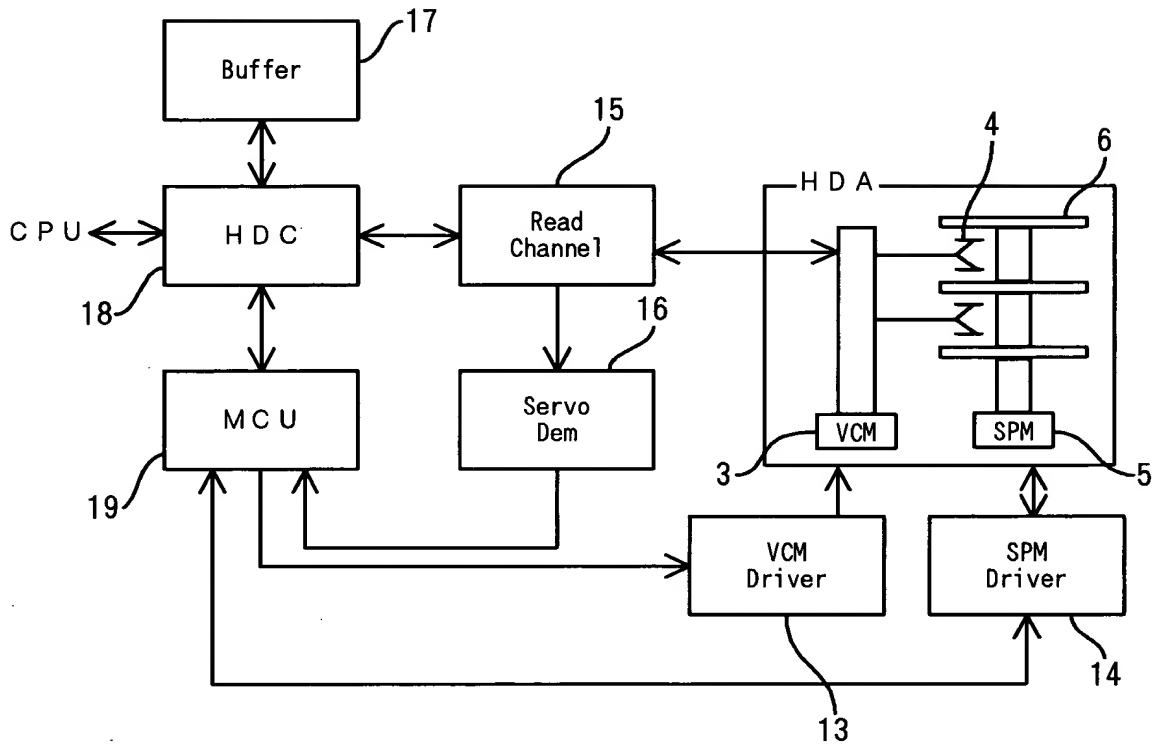
FIG. 2

009111" 8/SET/60

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

HEAD POSITIONING CONTROL METHOD
Kazuhiko Takaishi
Greer, Burns & Crain, Ltd. (James Folker)
Ref. No. 3408.64941
(312) 360 0080
Sheet 3 of 47

FIG. 3

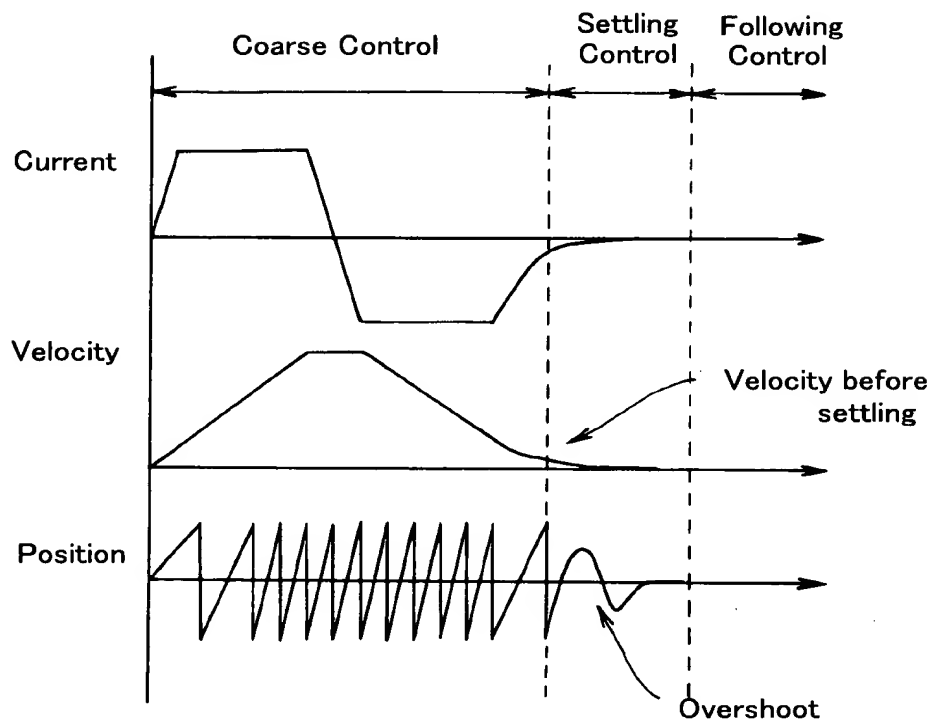


009111" B/5ET/60

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

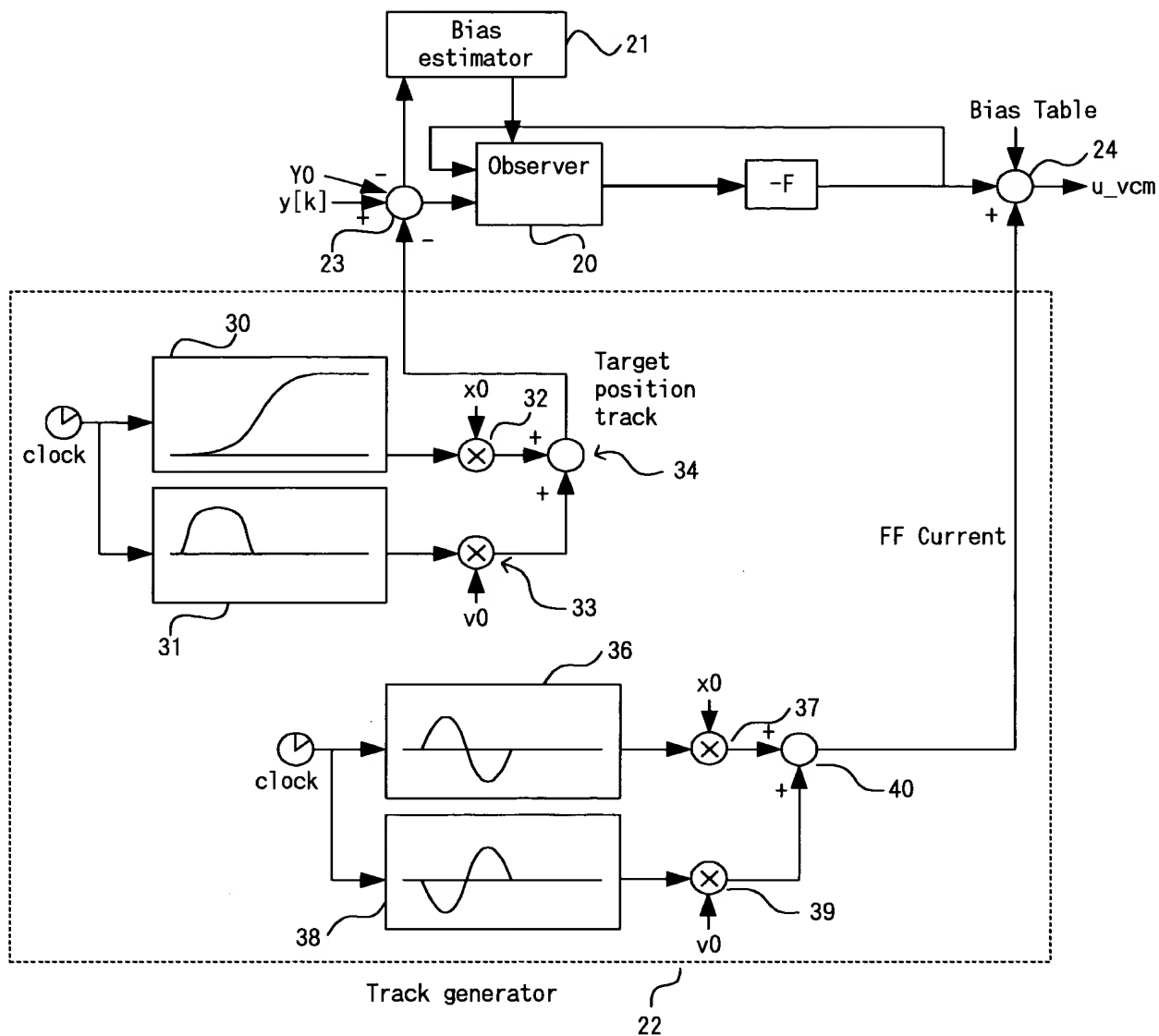
HEAD POSITIONING CONTROL METHOD
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 4 of 47

FIG. 4



09713578-111600

FIG. 6



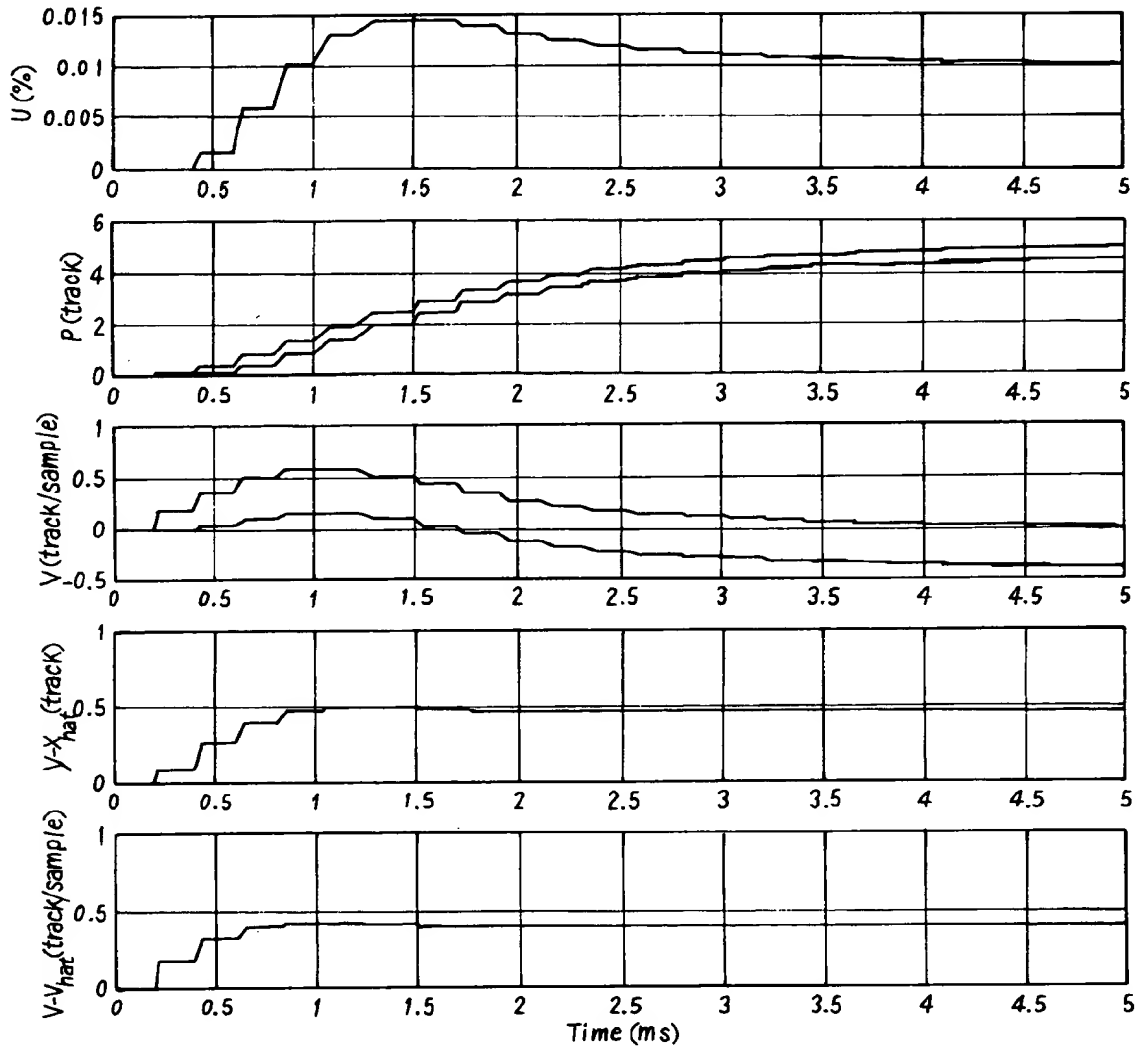
0971.3578.11600

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

HEAD POSITIONING CONTROL METHOD
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 7 of 47

FIG. 7

Response when bias is applied



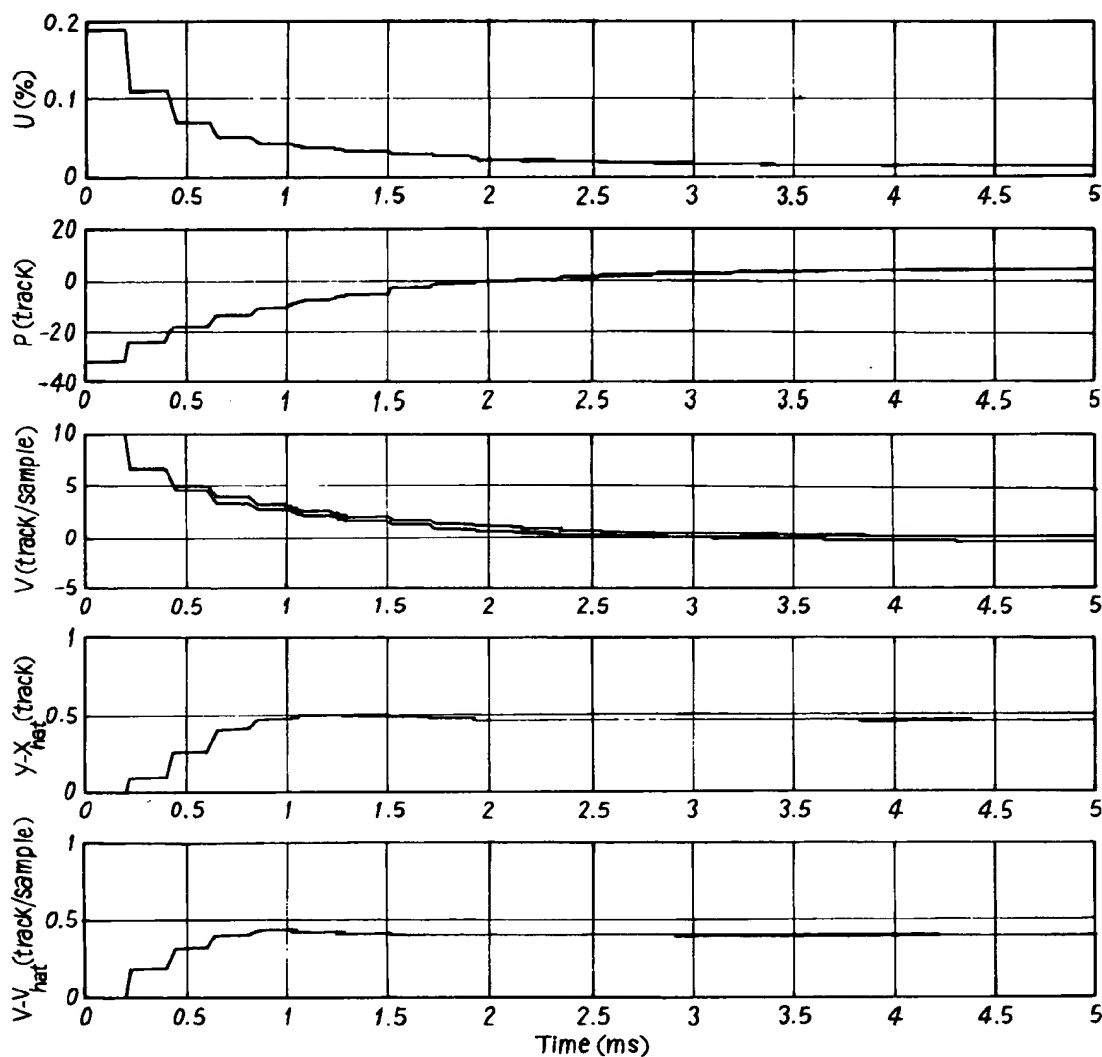
009111" 8/55ET/60

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

HEAD POSITIONING CONTROL METHOD
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 8 of 47

FIG. 8

Response when bias is applied



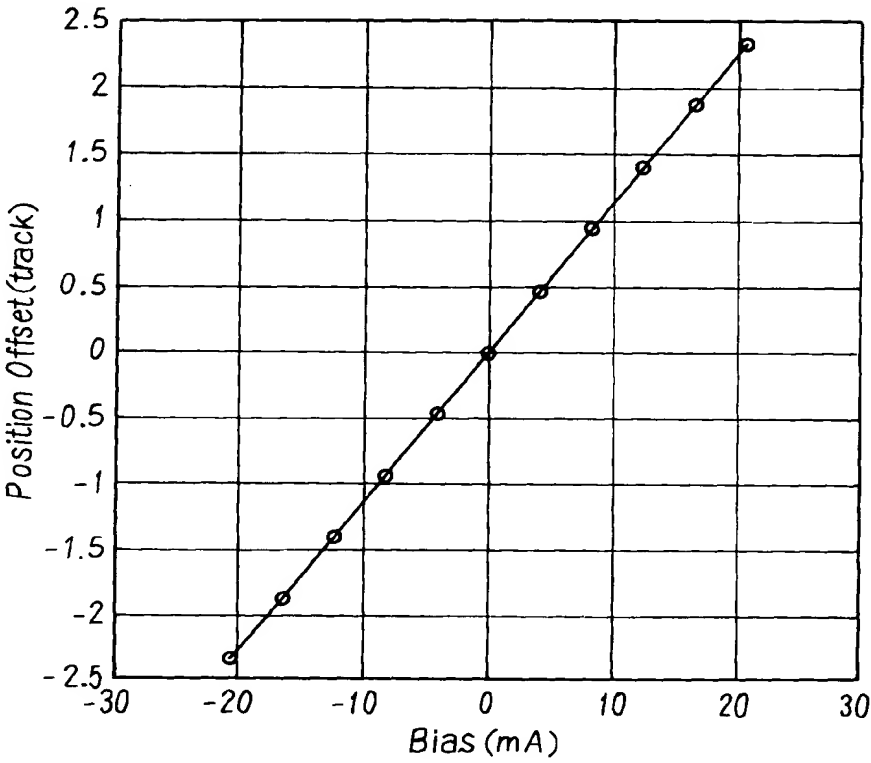
00911" B25ET260

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

HEAD POSITIONING CONTROL METHOD
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 9 of 47

FIG. 9

Relation bias and position offset



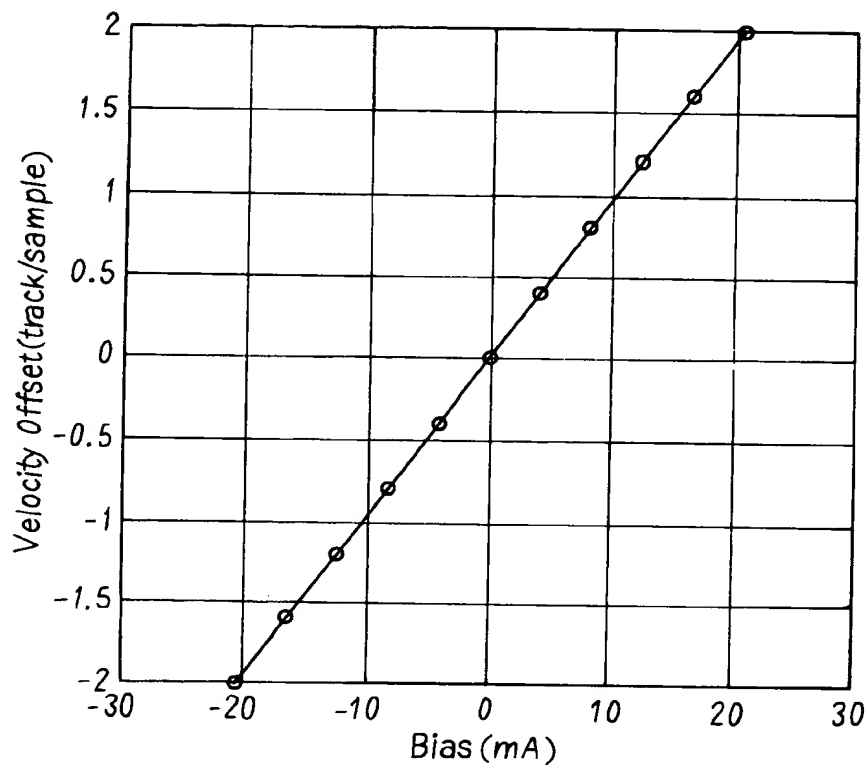
009111" 8/5ET/60

APPROVED	O.G. FG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

HEAD POSITIONING CONTROL MET
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 10 of 47

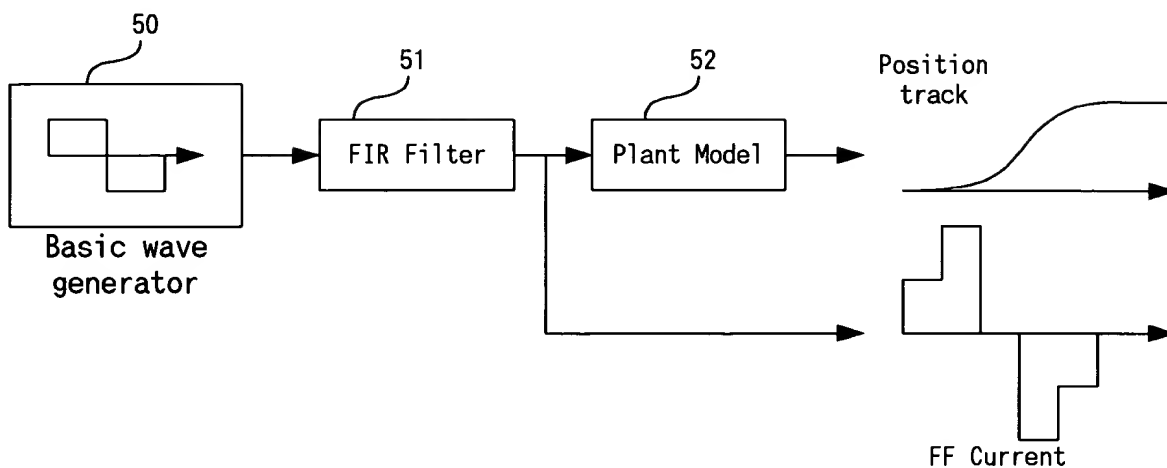
FIG. 10

Relation bias and velocity offset



009111" 8/55T/60

FIG. 11



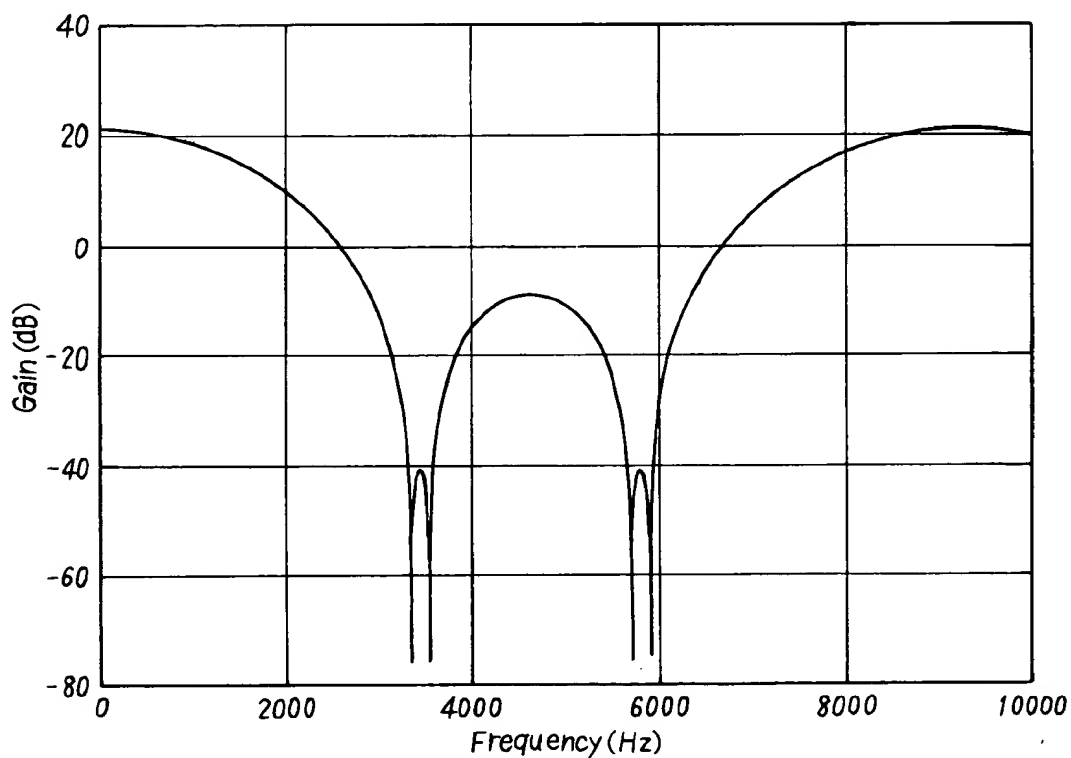
09713578-111600

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

HEAD POSITIONING CONTROL METHOD
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 12 of 47

FIG. 12

FIR Filter



009111 8/55T/60

APPROVED	O.S. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

HEAD POSITIONING CONTROL METHOD
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 13 of 47

FIG. 13A

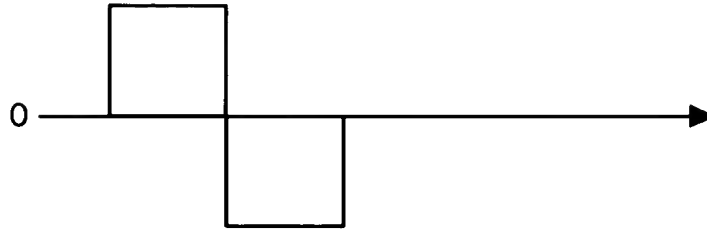


FIG. 13B

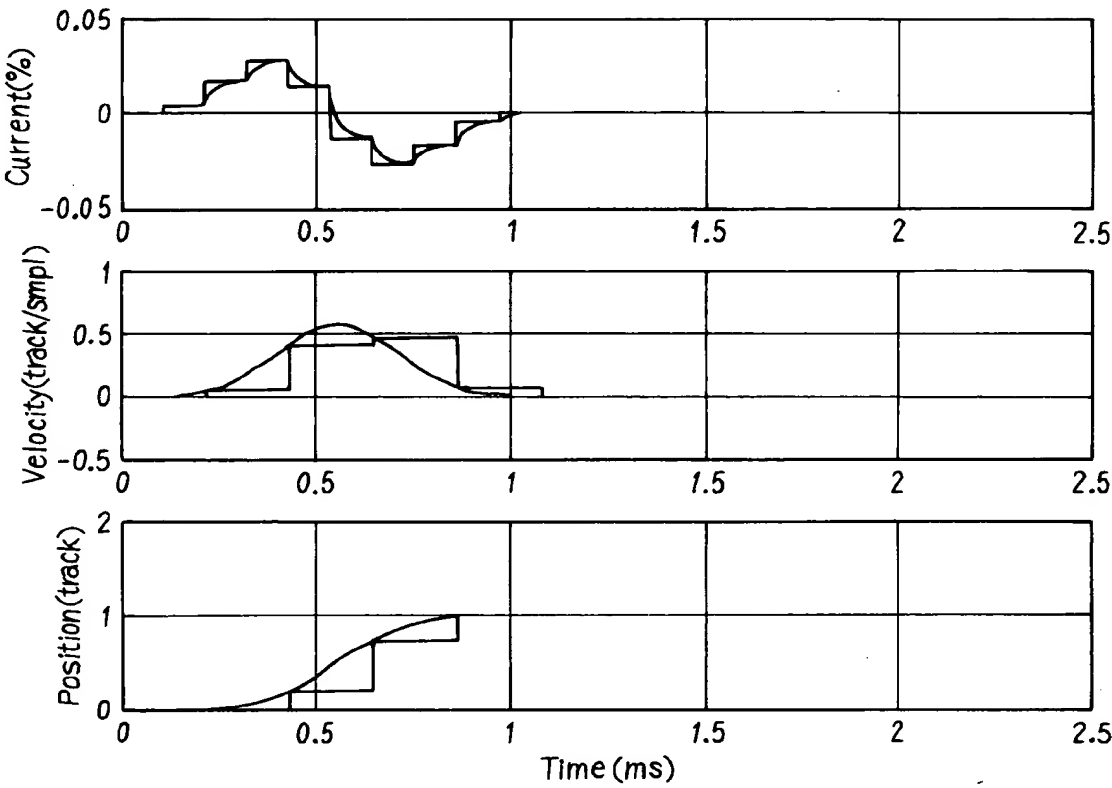


009111.825ET260

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

HEAD POSITIONING CONTROL METHOD
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 14 of 47

FIG. 14

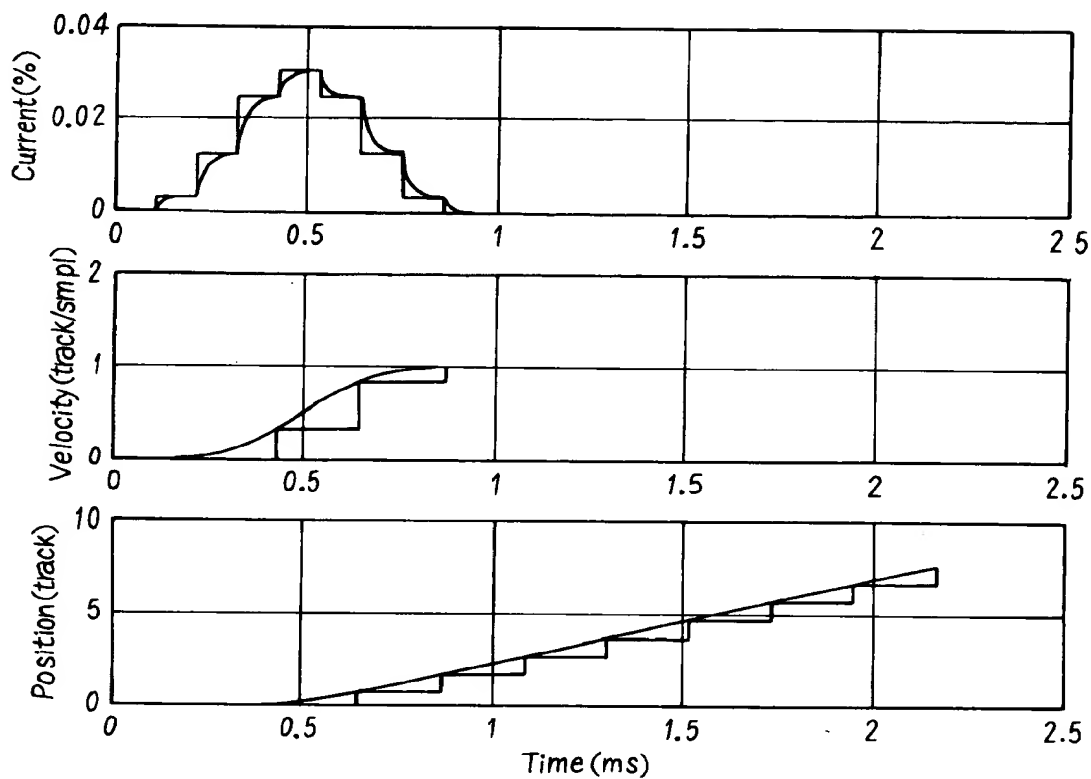


009111" 2/55T/60

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DESIGNER		

HEAD POSITIONING CONTROL METHOD
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 15 of 47

FIG. 15

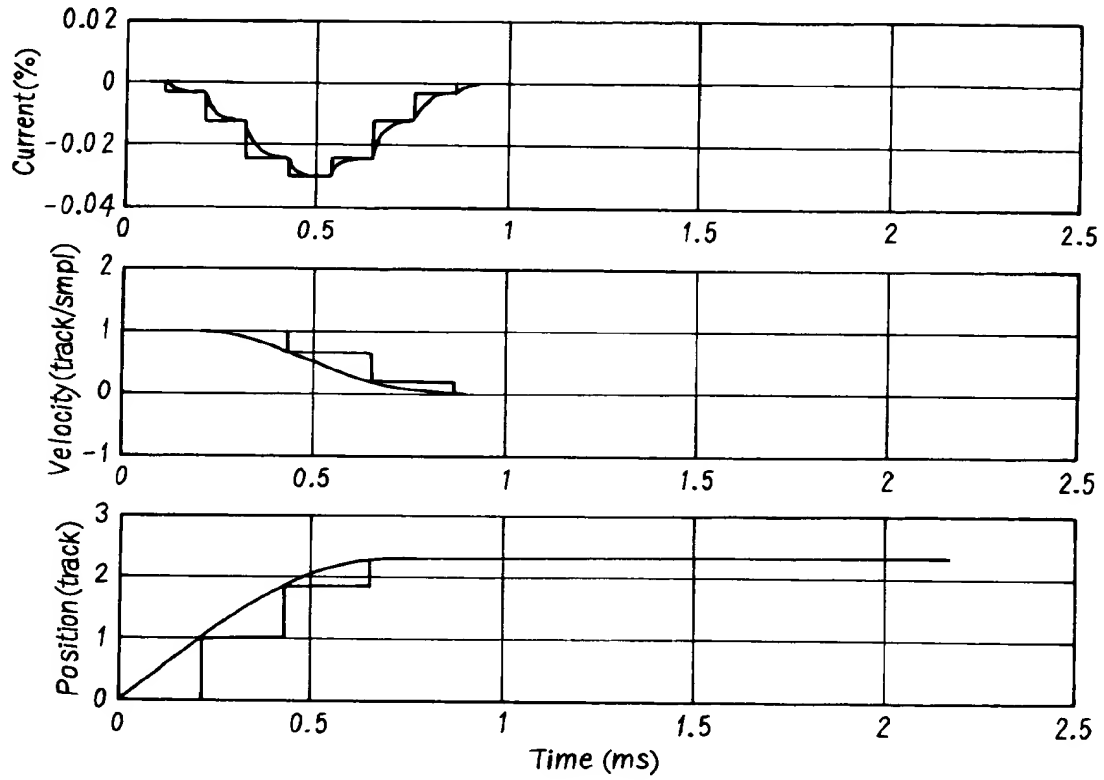


009111 82551260

APPROVED	D.G. FG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

HEAD POSITIONING CONTROL METHOD...
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 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 16 of 47

FIG. 16

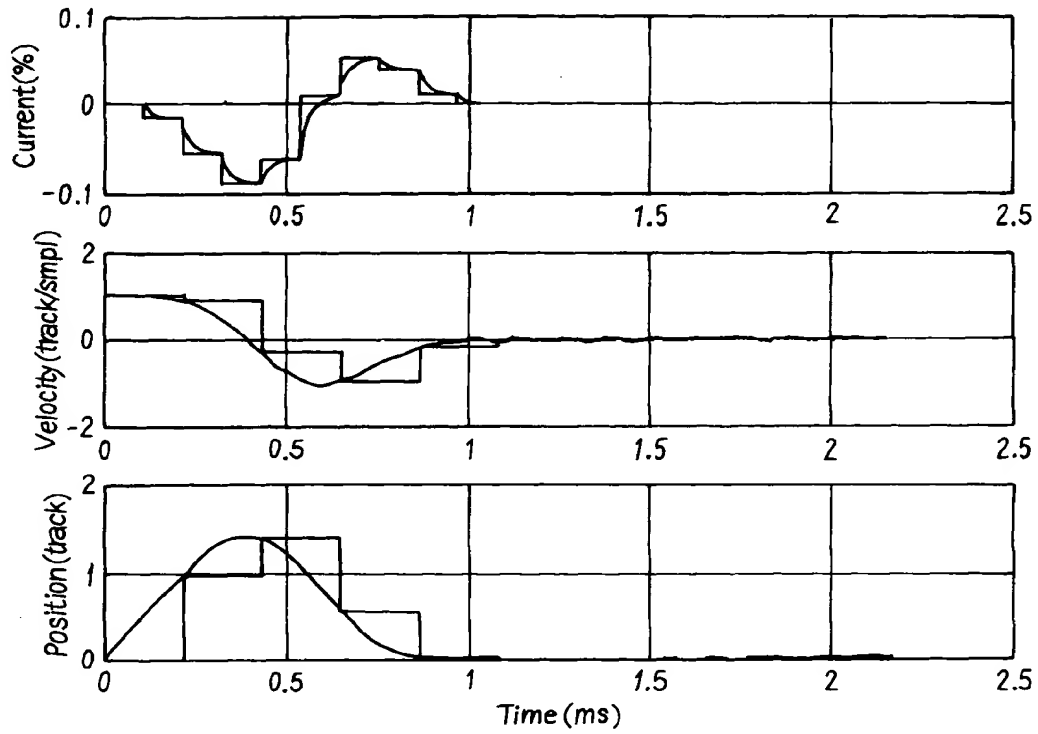


009111" 825ET 260

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DATE		

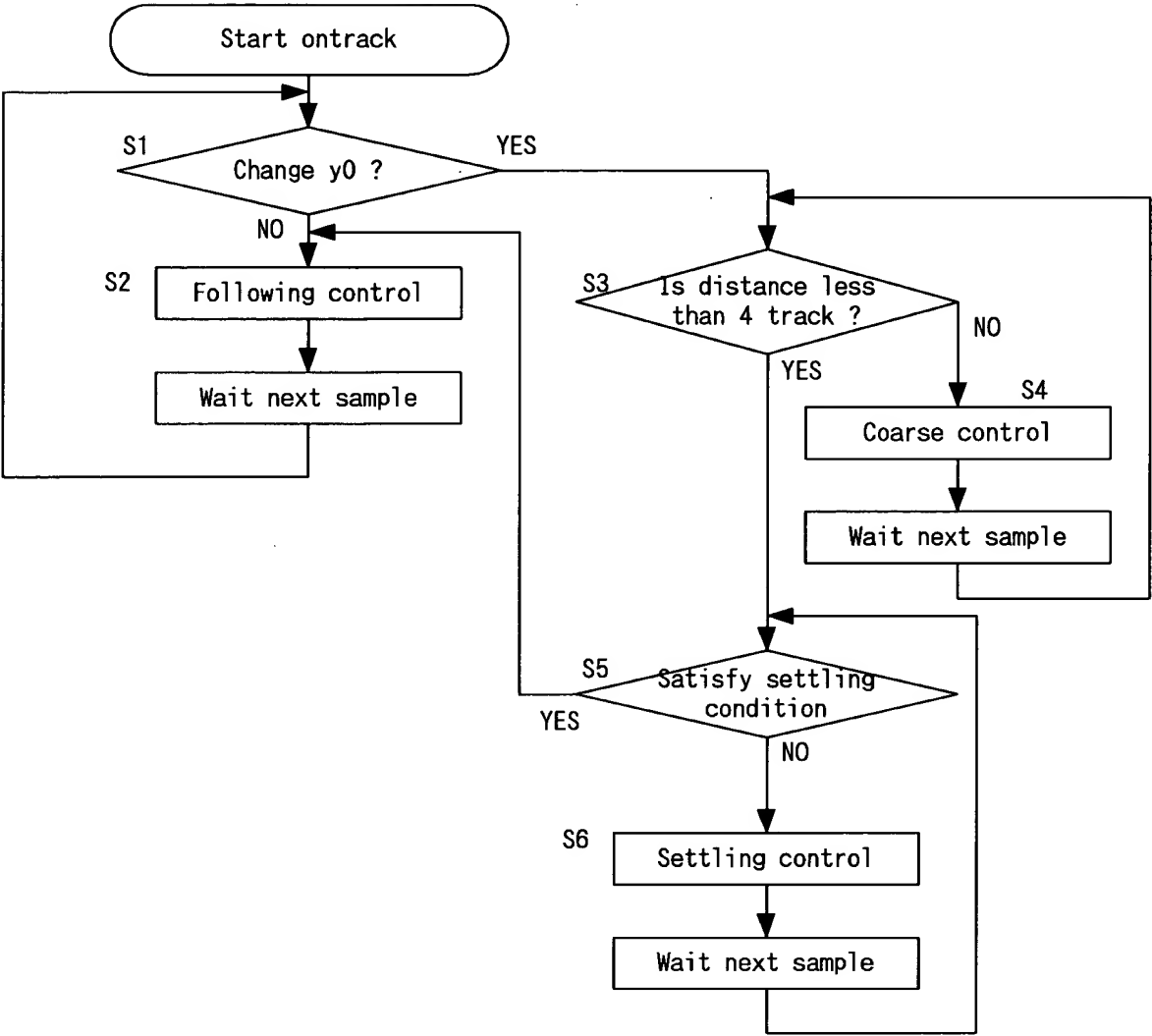
HEAD POSITIONING CONTROL METHOD
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 17 of 47

FIG. 17



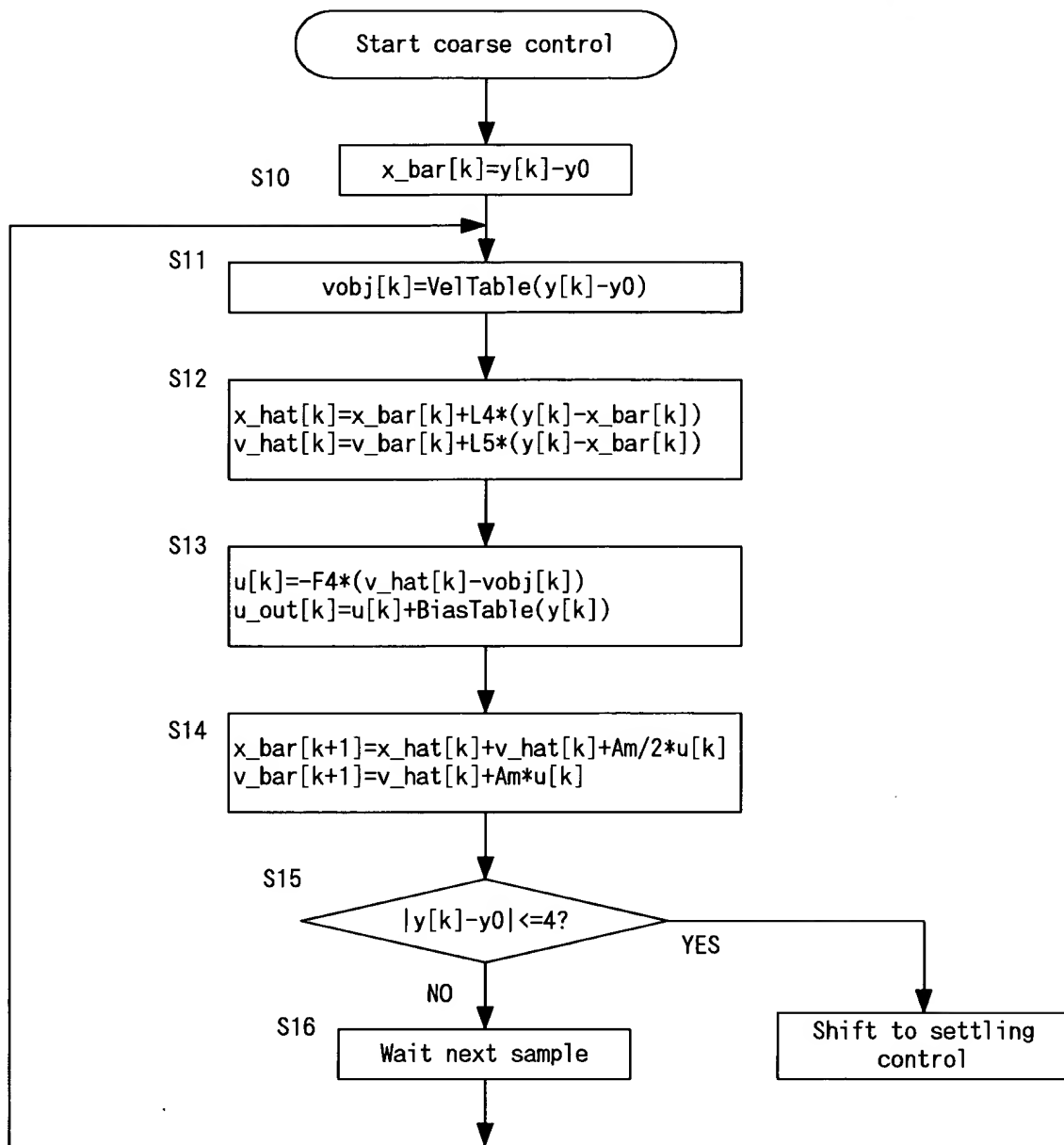
09713578-11600

FIG. 18



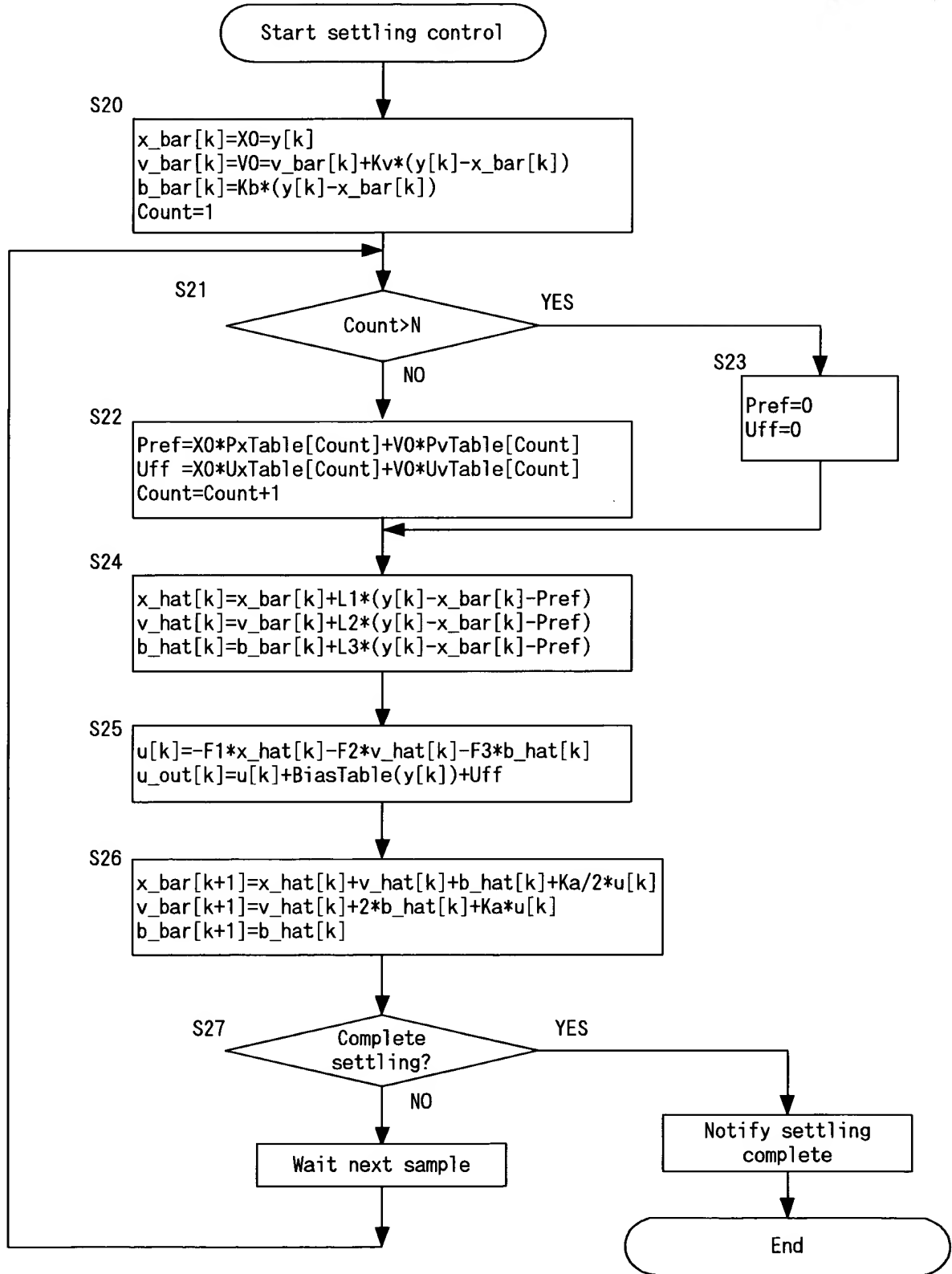
009111 87511260

FIG. 19



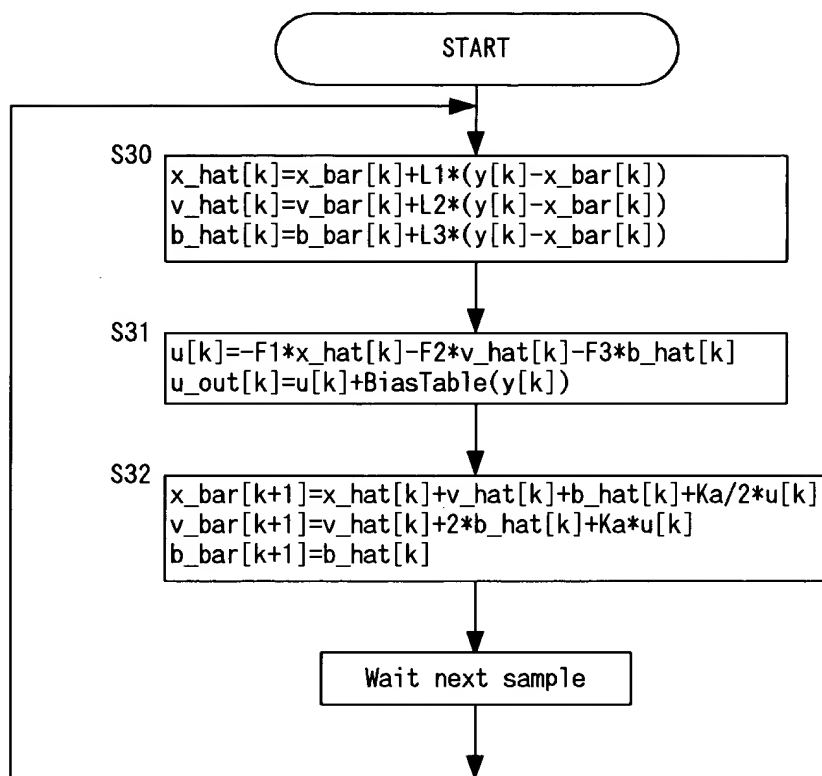
09713578-11600

FIG. 20



09713578.11600

FIG. 21



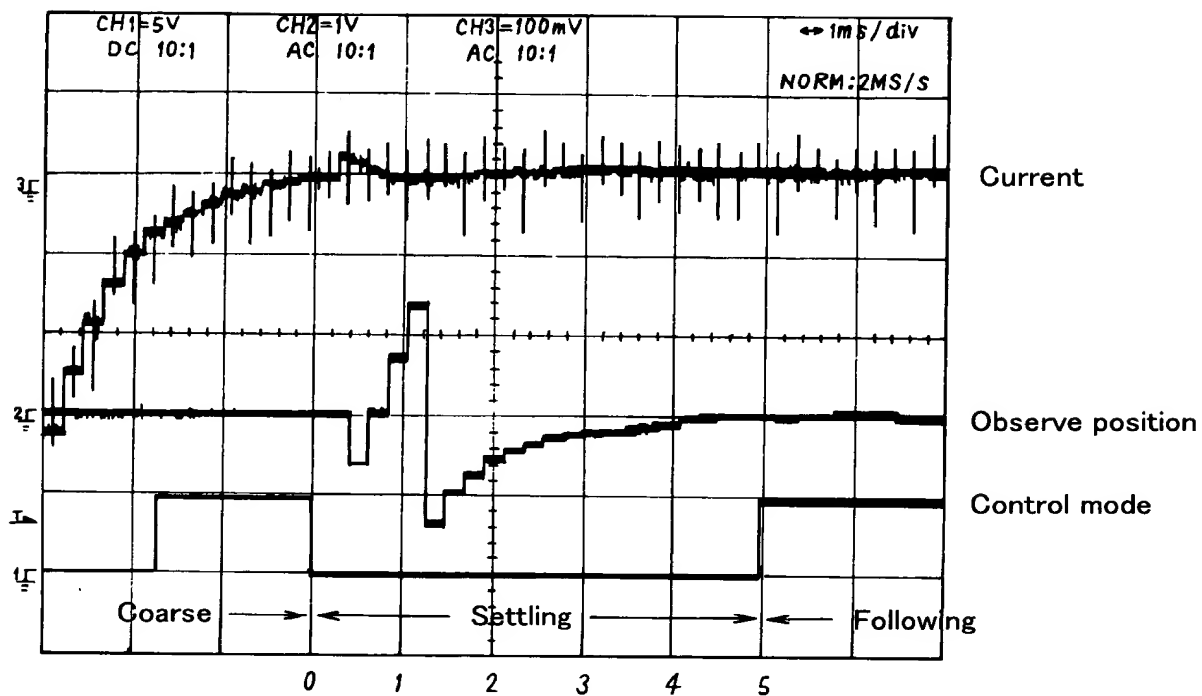
09713578-11600

APPROVED	D.G.F.G.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

HEAD POSITIONING CONTROL METHOD
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 22 of 47

FIG. 22

Prior art



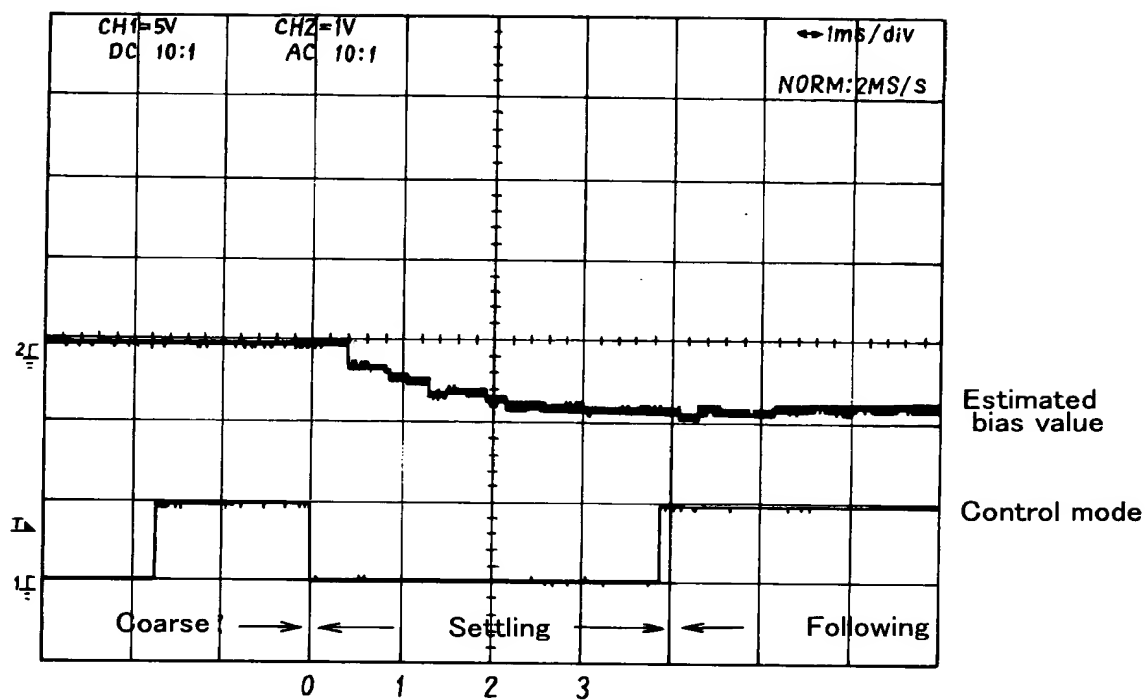
09713578-111600

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

HEAD POSITIONING CONTROL METHOD
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 23 of 47

FIG. 23

Prior art

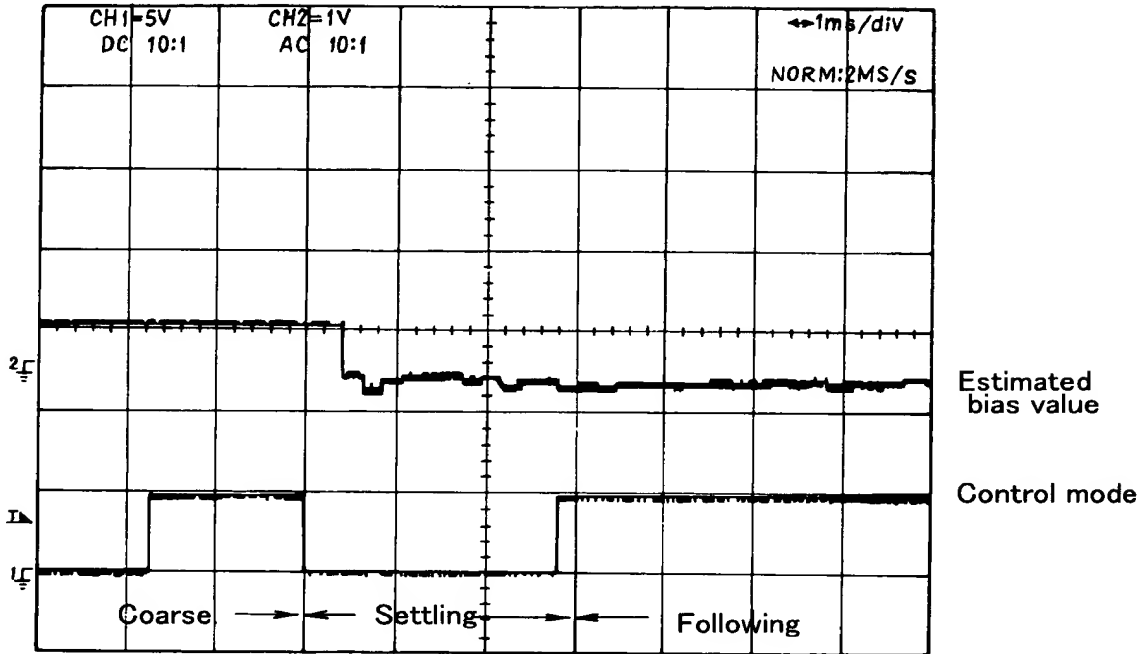


009713578-11500

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DATE	

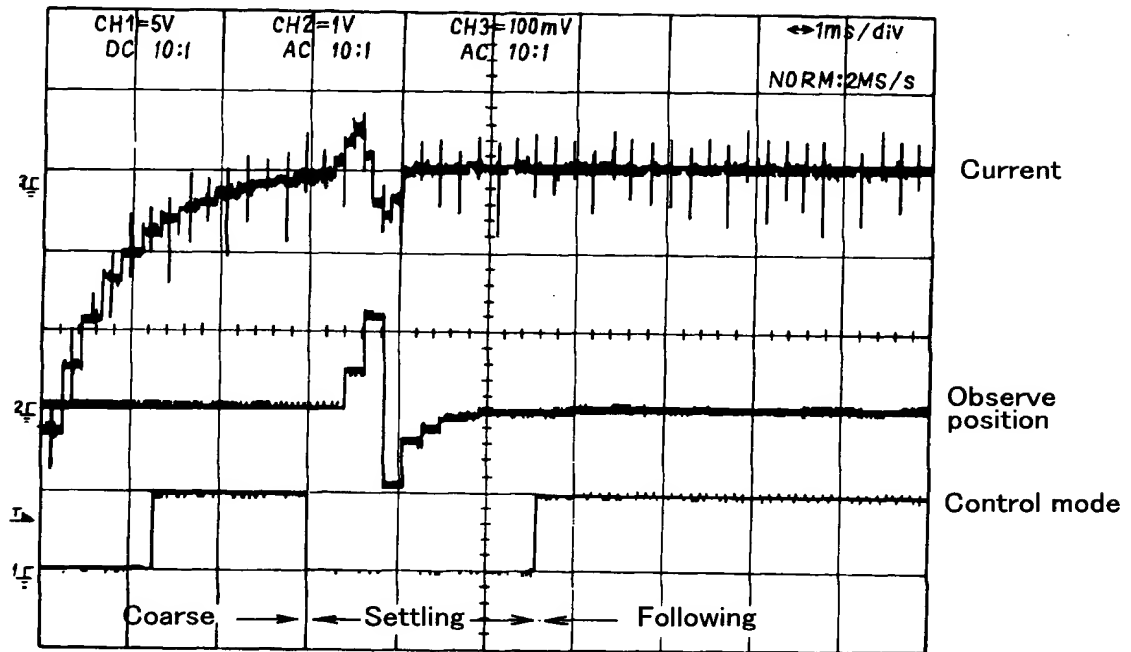
HEAD POSITIONING CONTROL METHOD...
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 24 of 47

FIG. 24



00713578 111500

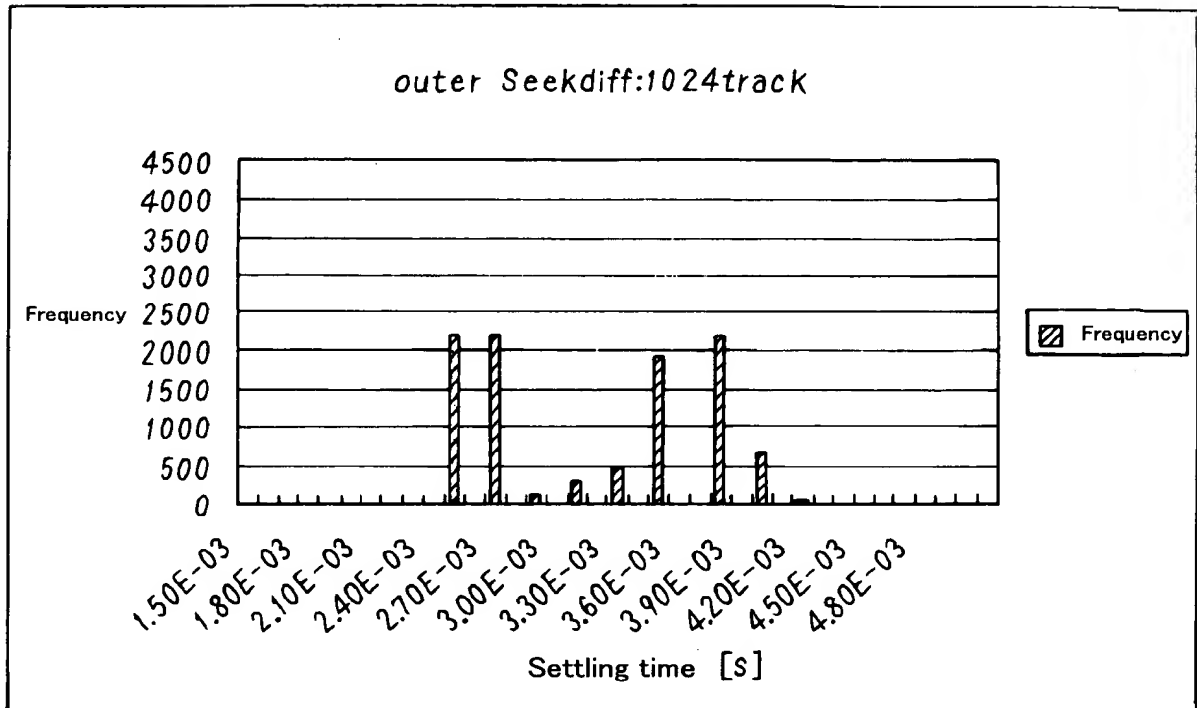
FIG. 25



09713578 11600

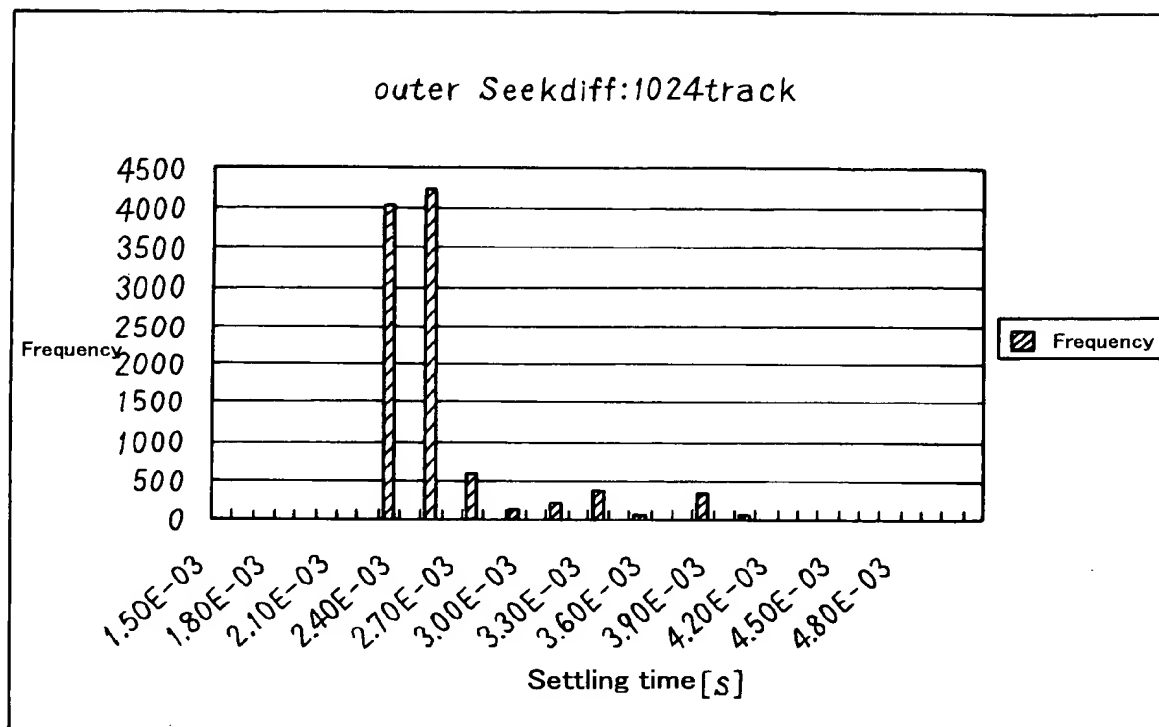
FIG. 26

Prior art



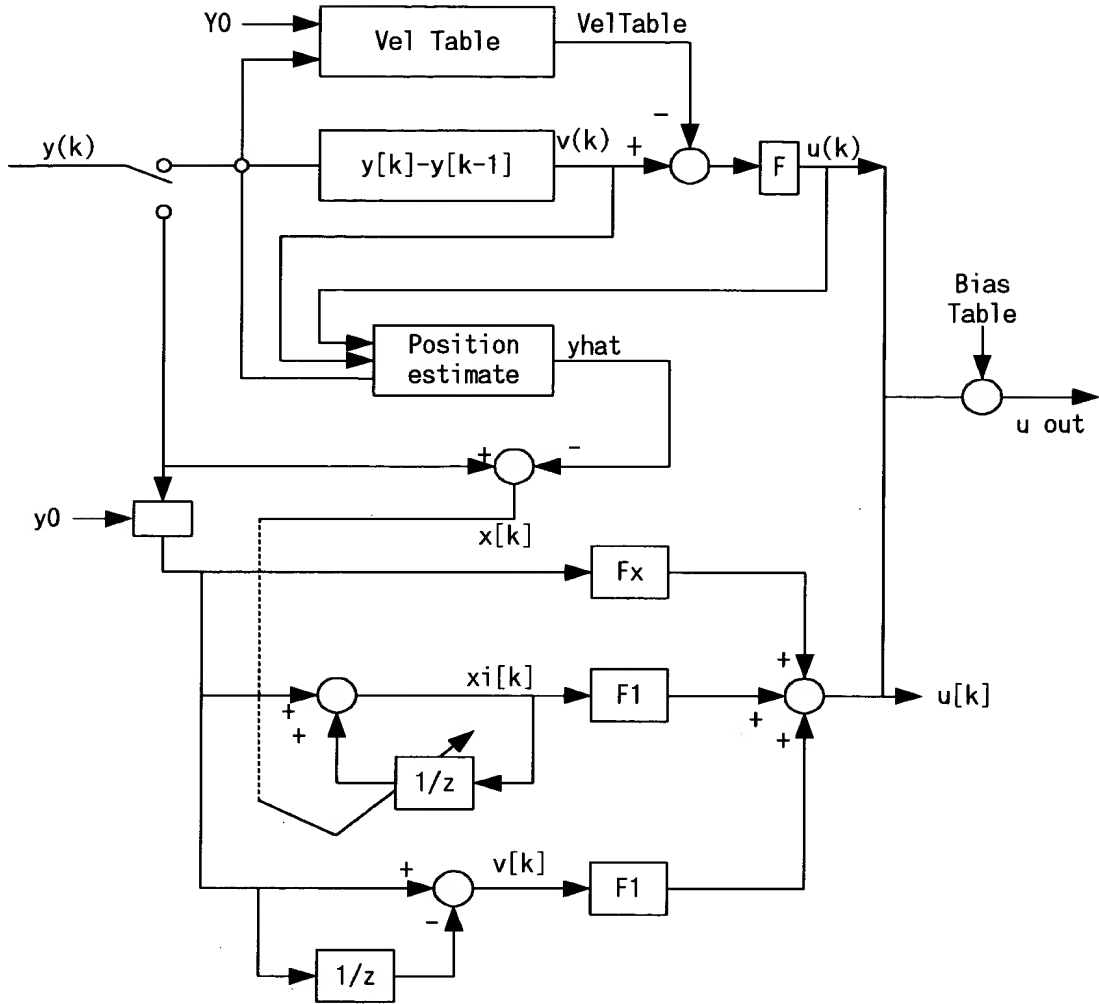
09713578.111600

FIG. 27



09713578-111500

FIG. 28



09713578-111600

FIG. 29

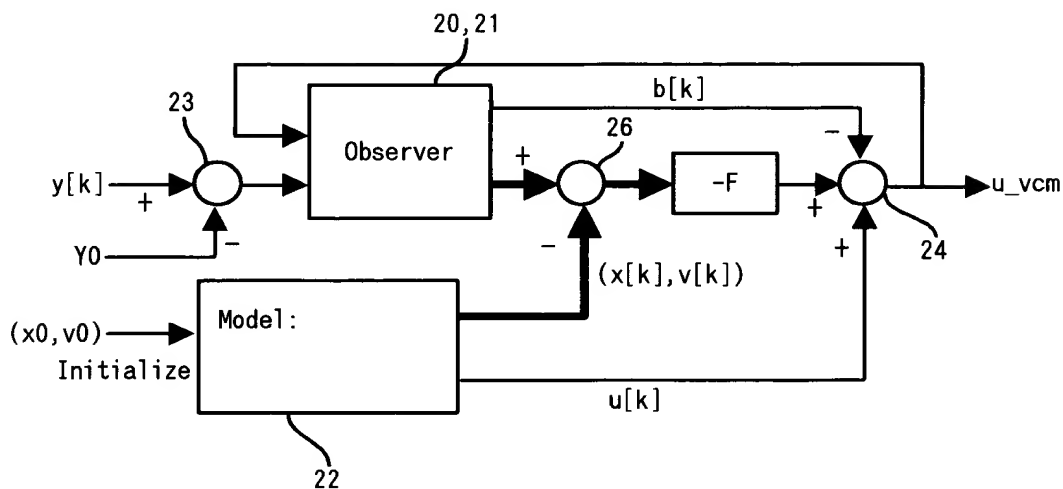
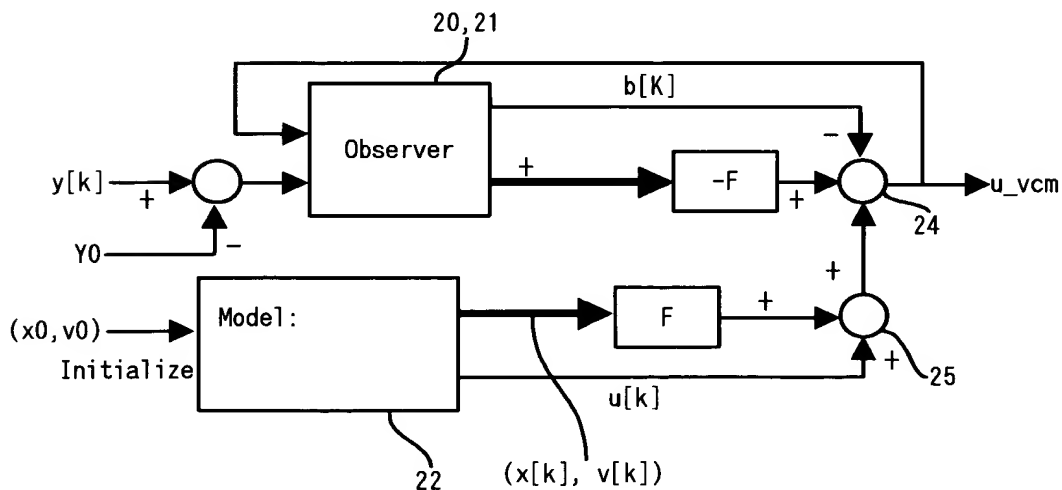
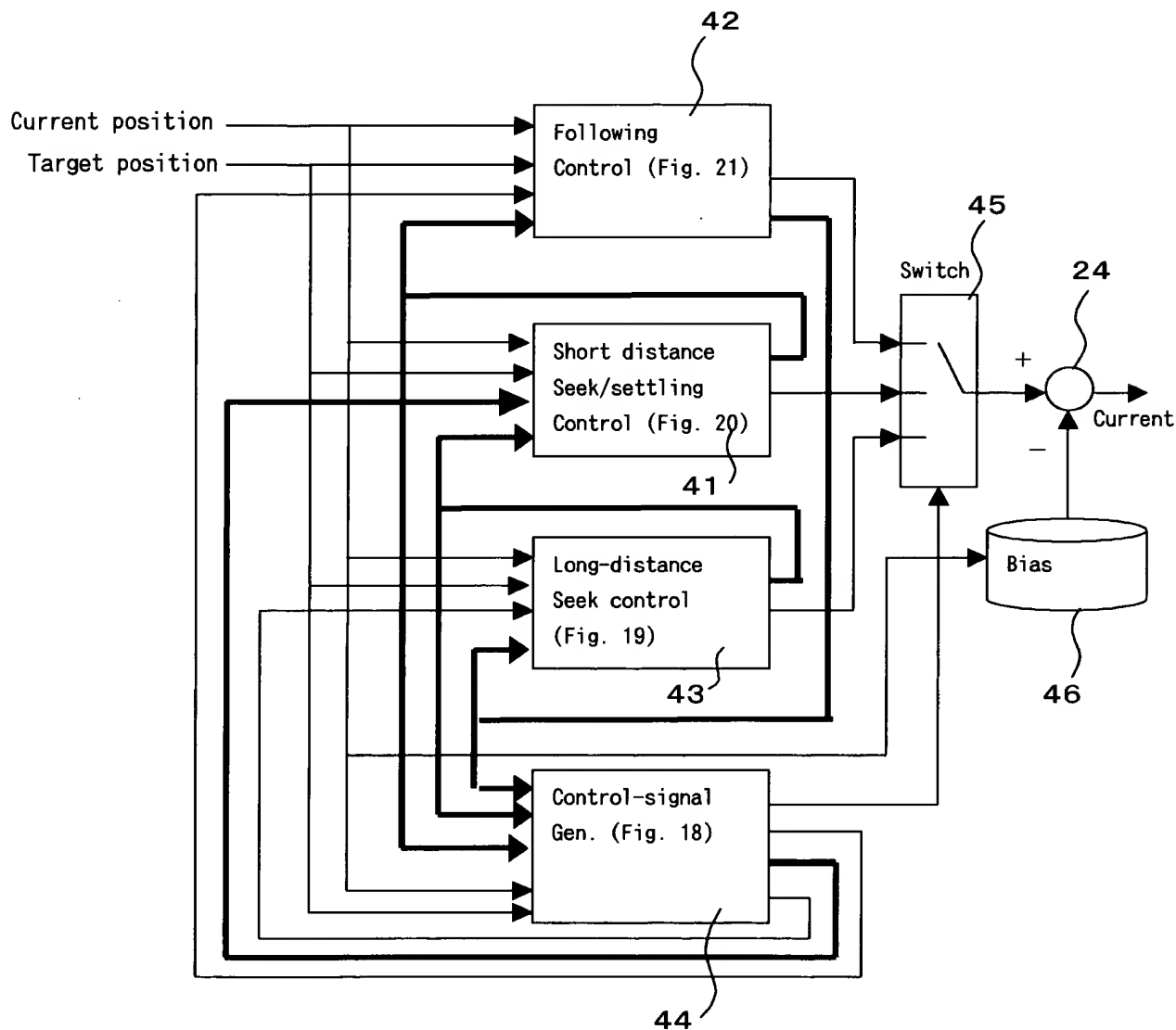


FIG. 30



009111-8/5578-111600

FIG. 31



009713578.11600

FIG. 32

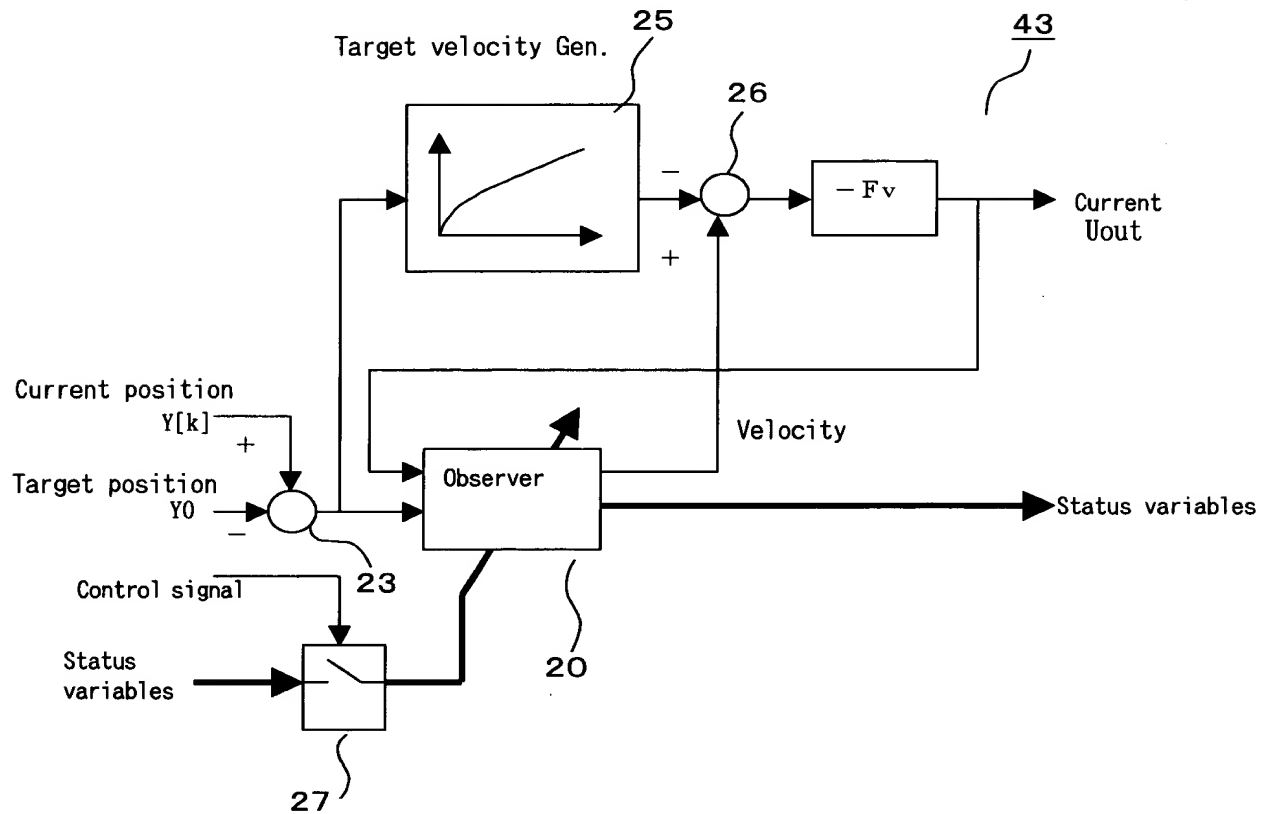
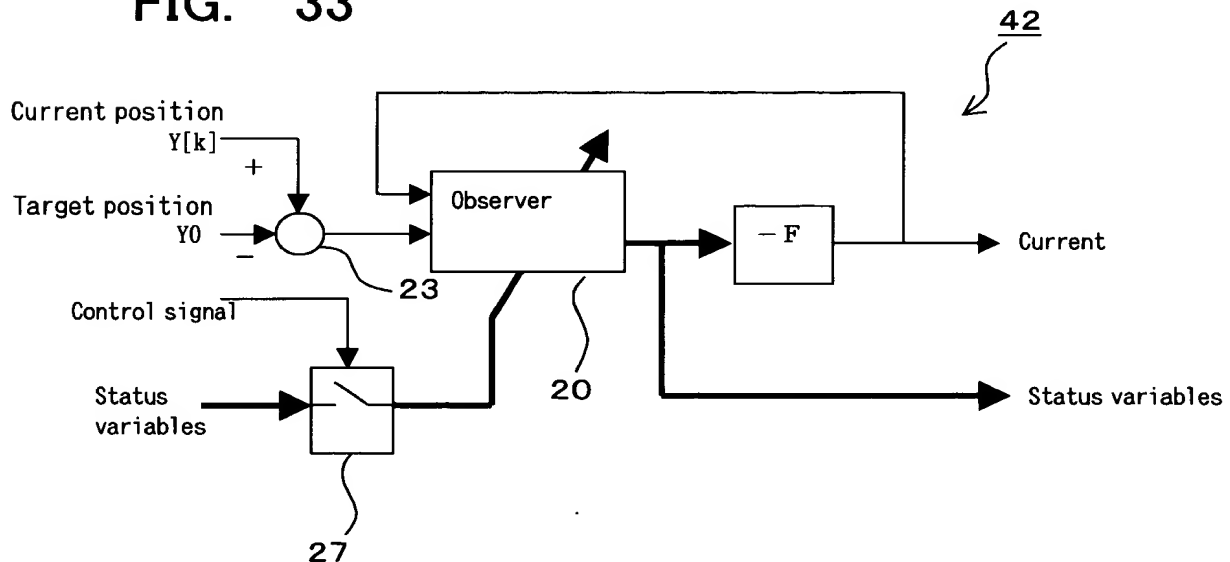
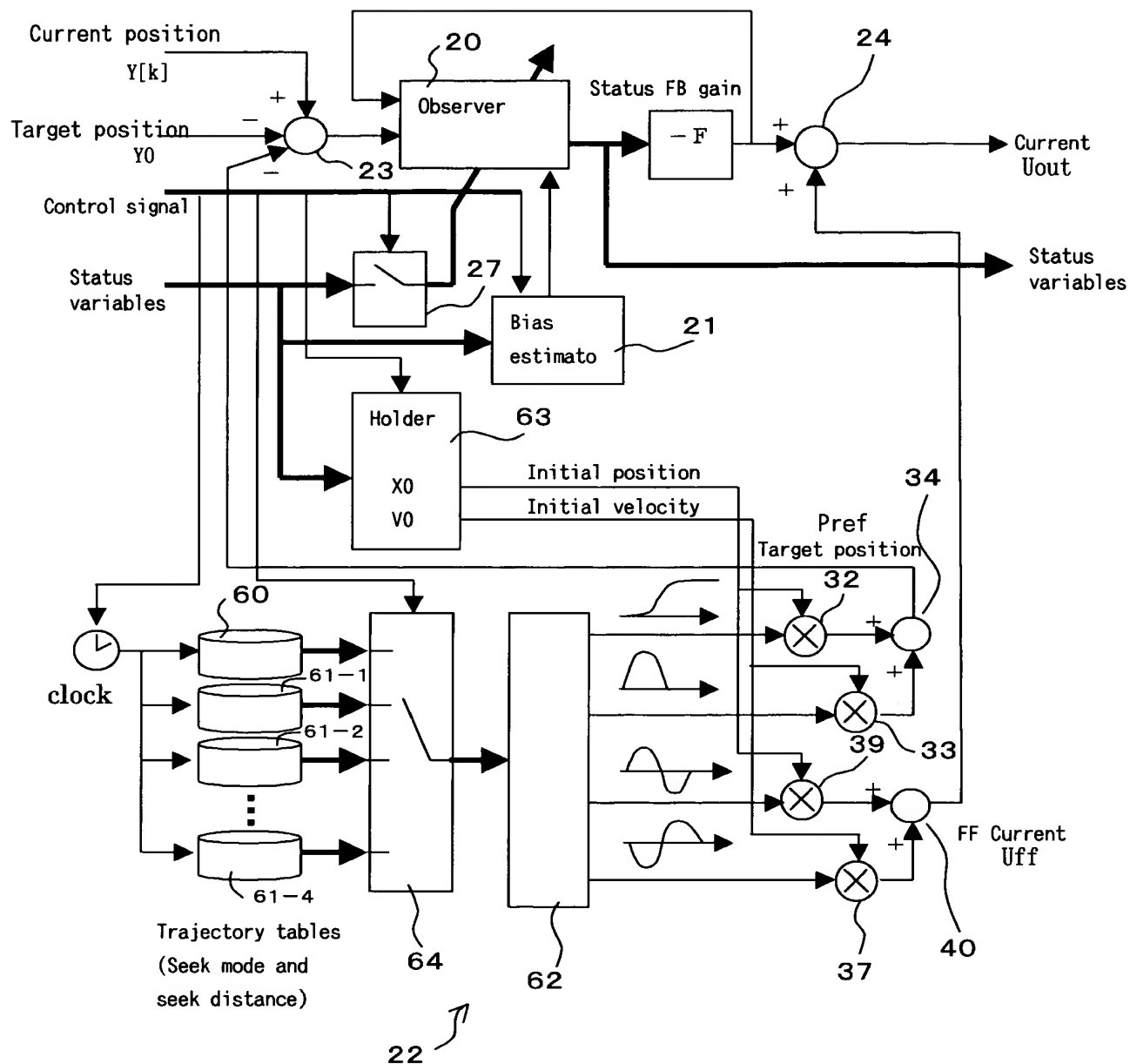


FIG. 33



41



APPROVED	O.G. FIG.
BY	CLASS SUBCLASS

HEAD POSITIONING CONTROL METHOD.
Kazuhiko Takaishi
Greer, Burns & Crain, Ltd. (James Folker)
Ref. No. 3408.64941
(312) 360 0080
Sheet 33 of 47

FIG. 35

60-1 ~ 60-N



x[0], u[0], u[0.5],
x[1], u[1], u[1.5],
x[2], u[2], u[2.5],
x[3], u[3], u[3.5],
x[4], u[4], u[4.5],
x[5], u[5], u[5.5],

30, 36

x[0], u[0], u[0.5],
x[1], u[1], u[1.5],
x[2], u[2], u[2.5],
x[3], u[3], u[3.5],
x[4], u[4], u[4.5],
x[5], u[5], u[5.5],

31, 38

009TTF 825ET 260

APPROVED	O.G. FIG.
BY	CLASS
DATE	SUBCLASS

HEAD POSITIONING CONTROL METHOD.

Kazuhiko Takaishi
Greer, Burns & Crain, Ltd. (James Folker)
Ref. No. 3408.64941
(312) 360 0080
Sheet 34 of 47

FIG. 36

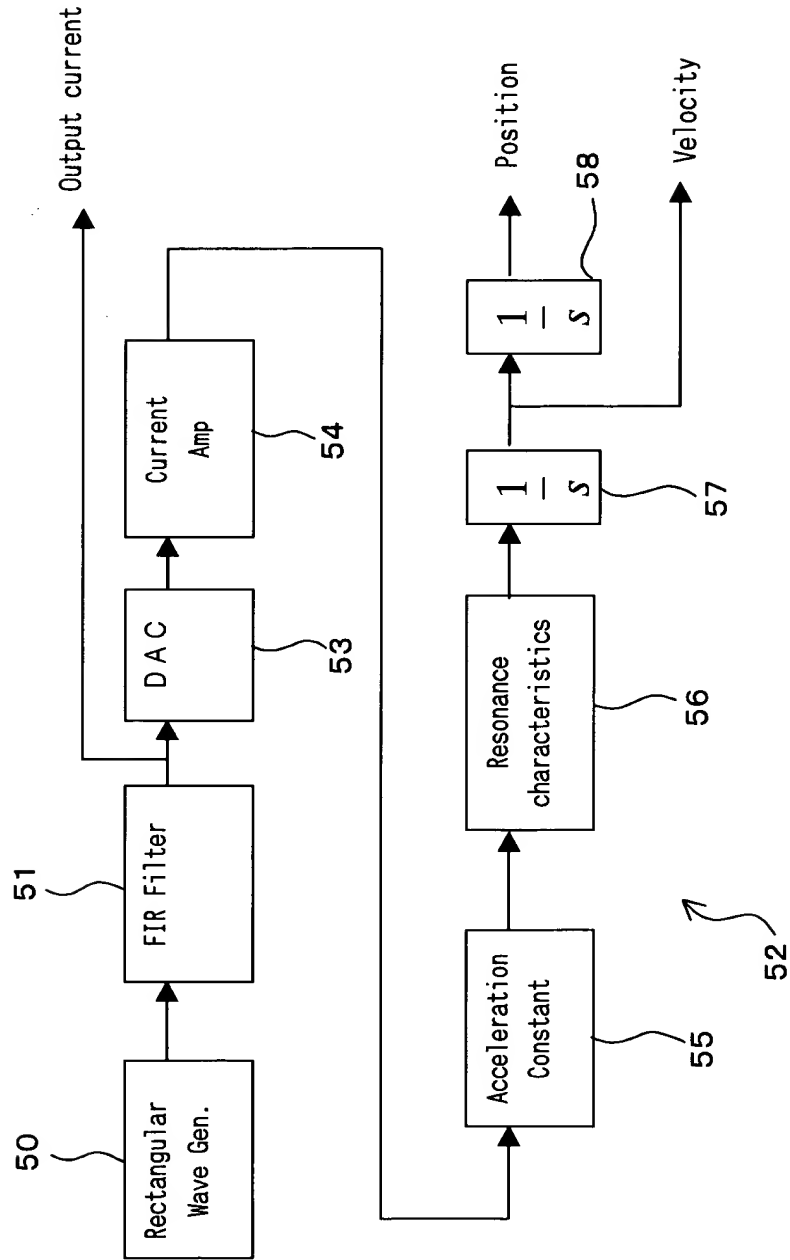


FIG. 37

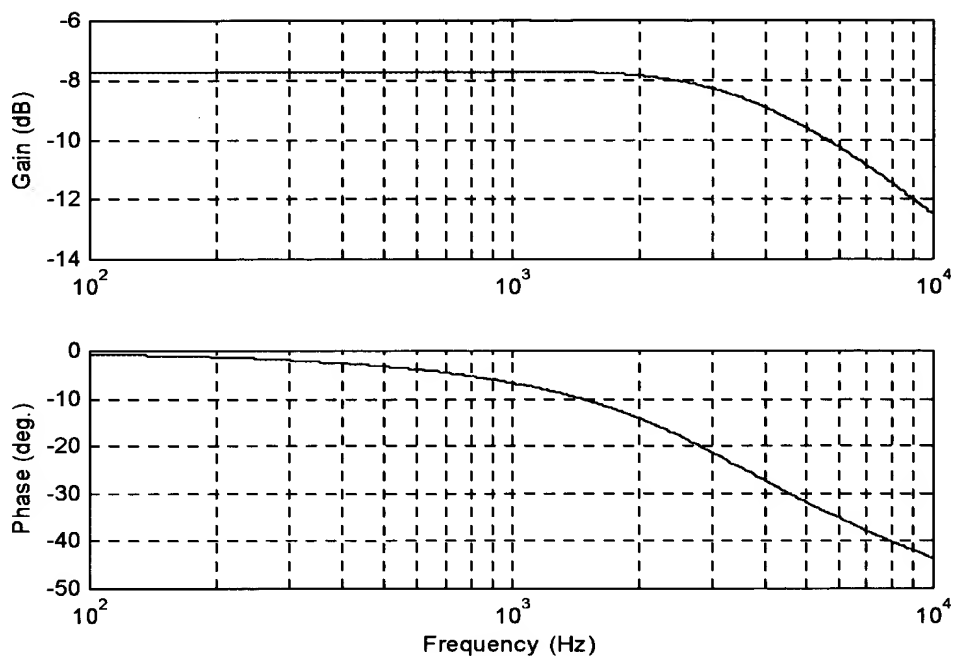
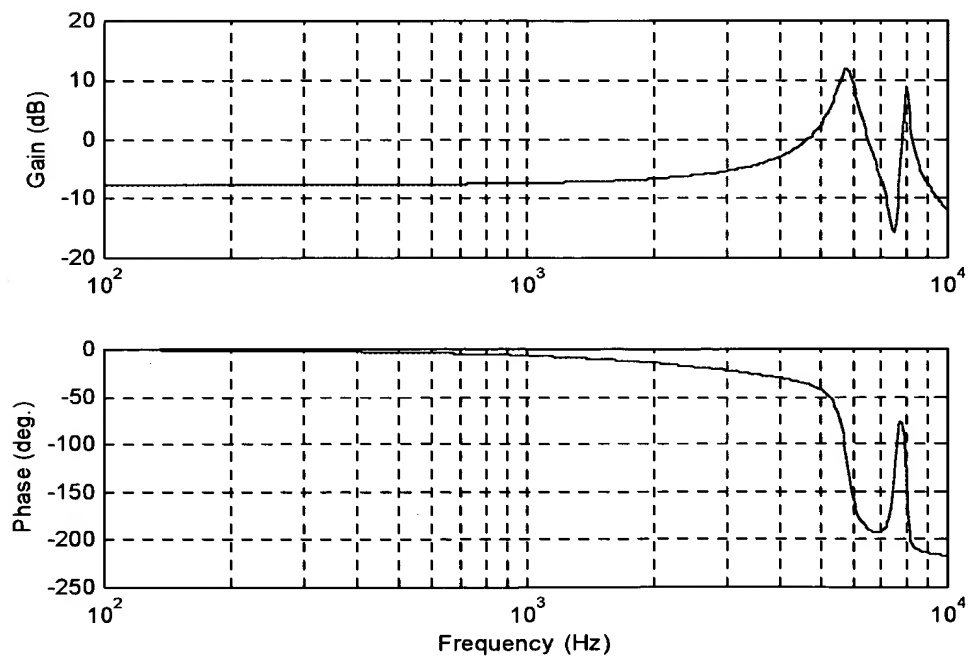


FIG. 38



009111" 0255760

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

HEAD POSITIONING CONTROL METHOD...
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 36 of 47

FIG. 39

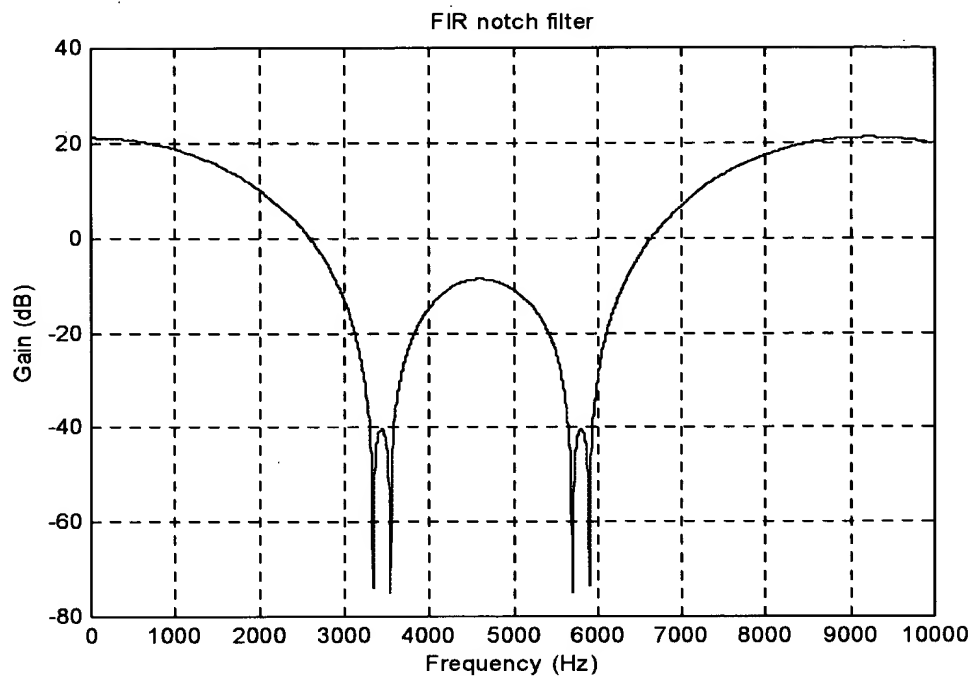
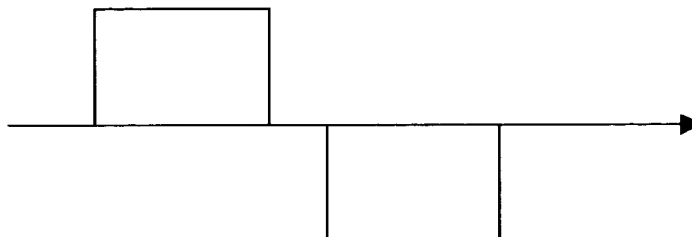


FIG. 40

Rectangular wave



009111" 8/587450

APPROVED	D.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

HEAD POSITIONING CONTROL METHOD...
 Kazuhiko Takaishi
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 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 37 of 47

FIG. 41

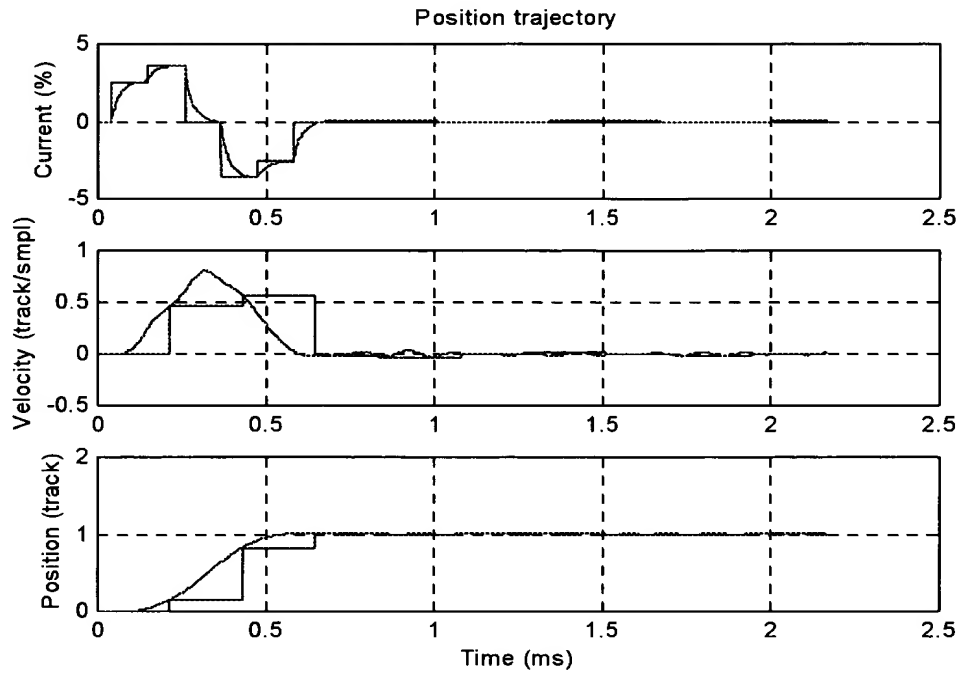


FIG. 42

Rectangular wave



00911T 0251760

FIG. 43

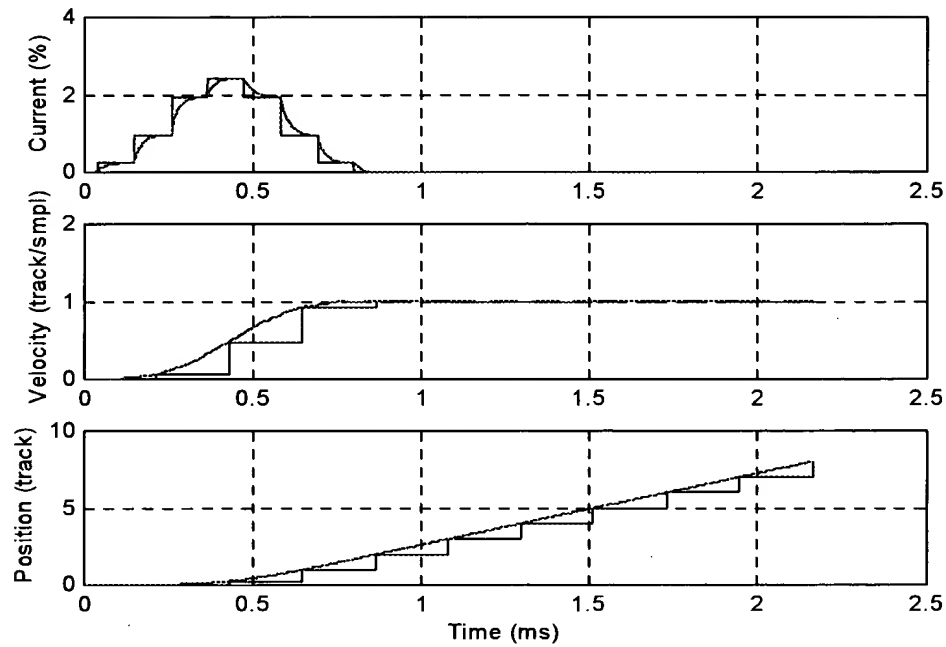
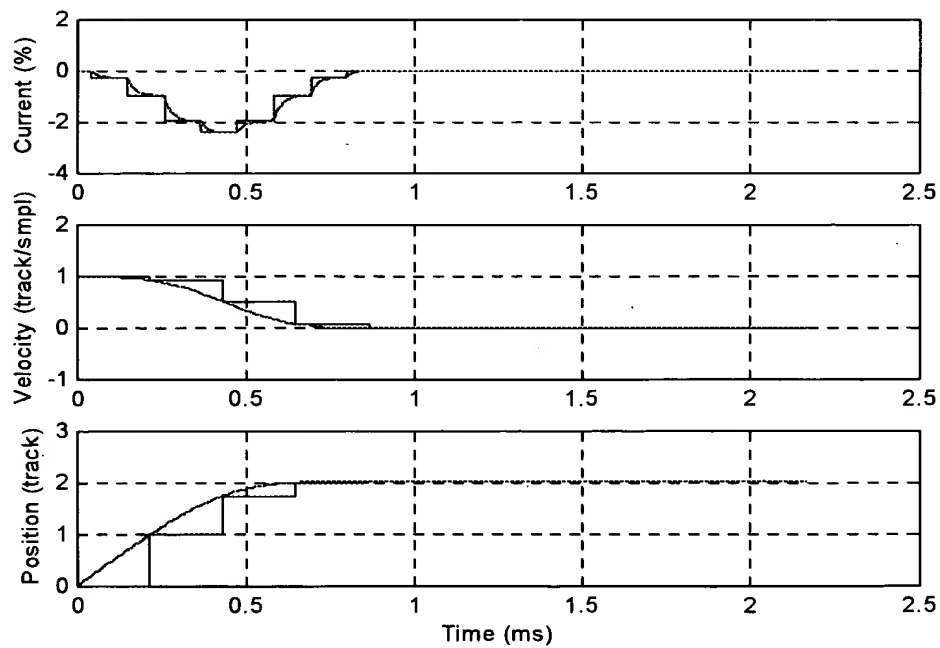


FIG. 44



009111" 8/55ET 4600

FIG. 45

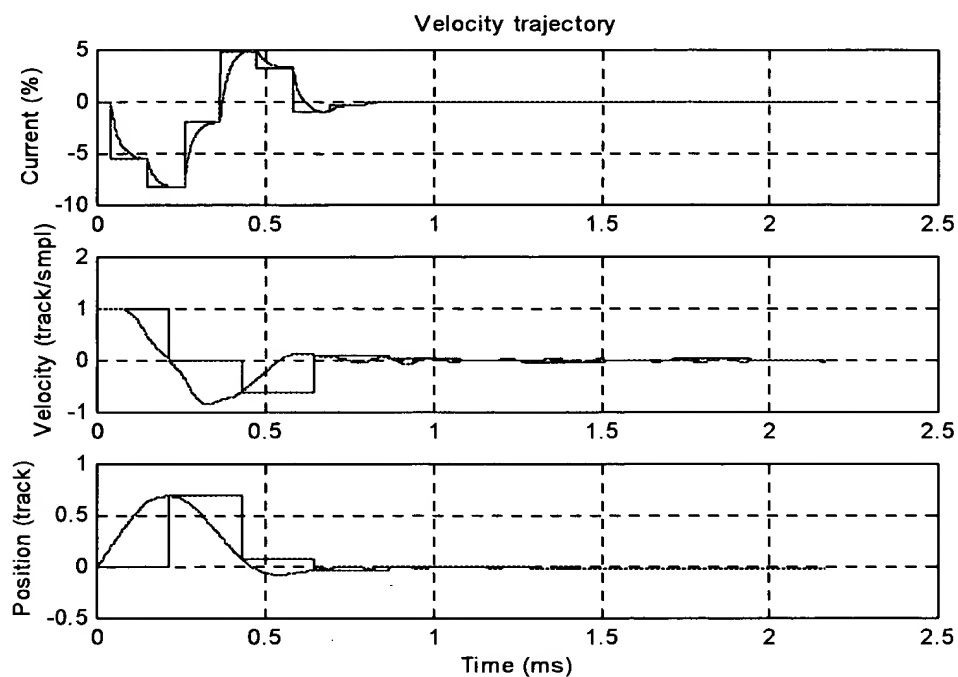
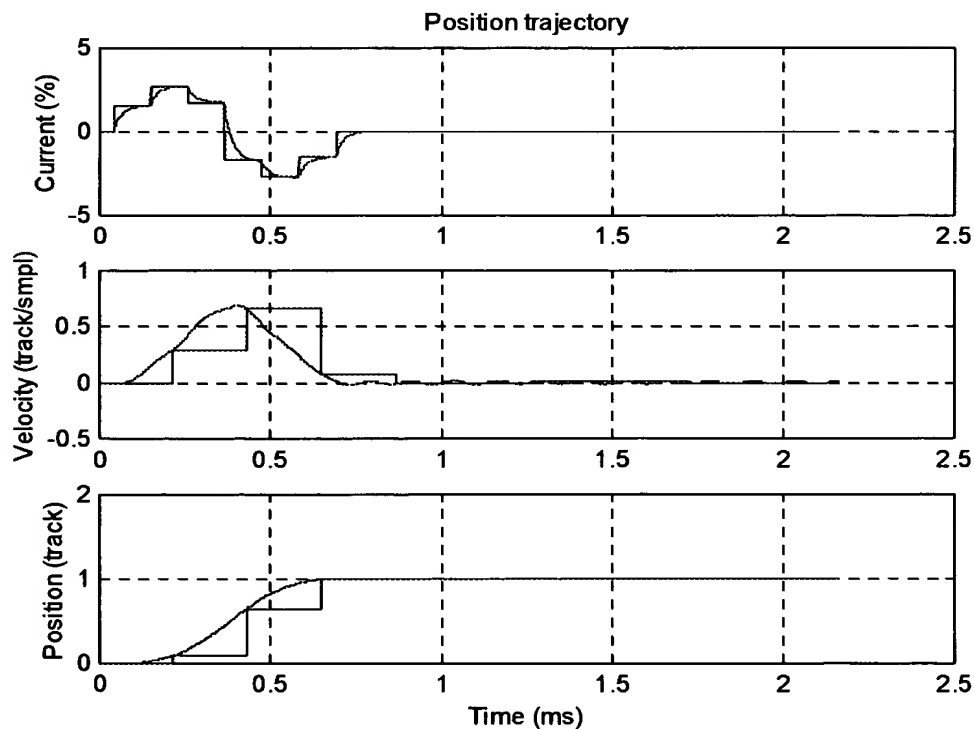


FIG. 46



009111" 8/5ET 460

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

HEAD POSITIONING CONTROL METHOD...
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 40 of 47

FIG. 47

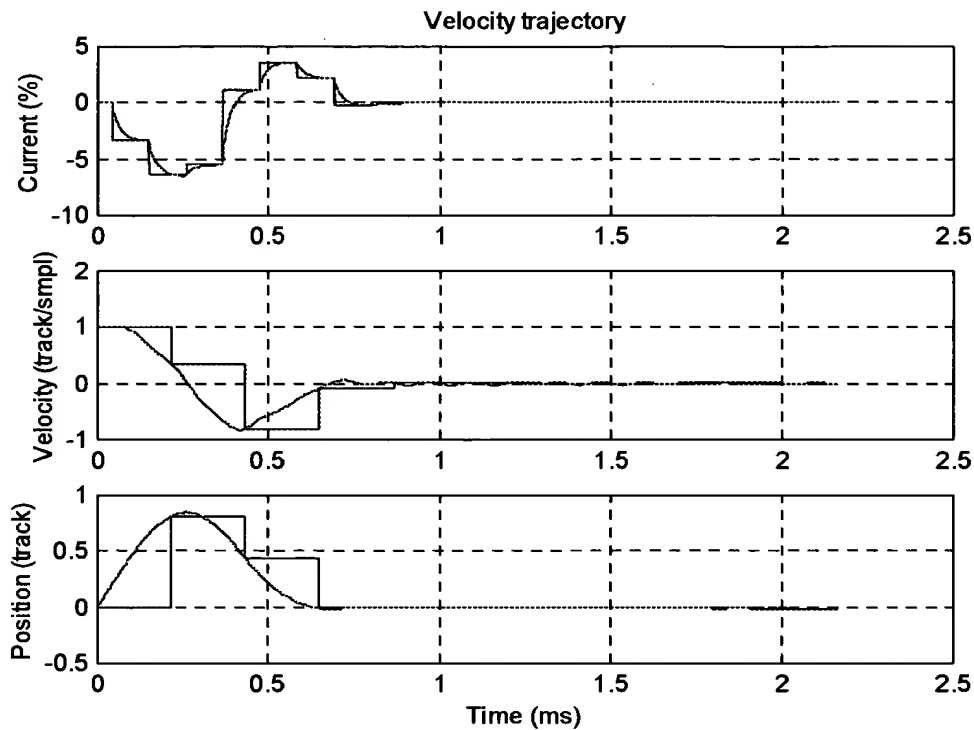
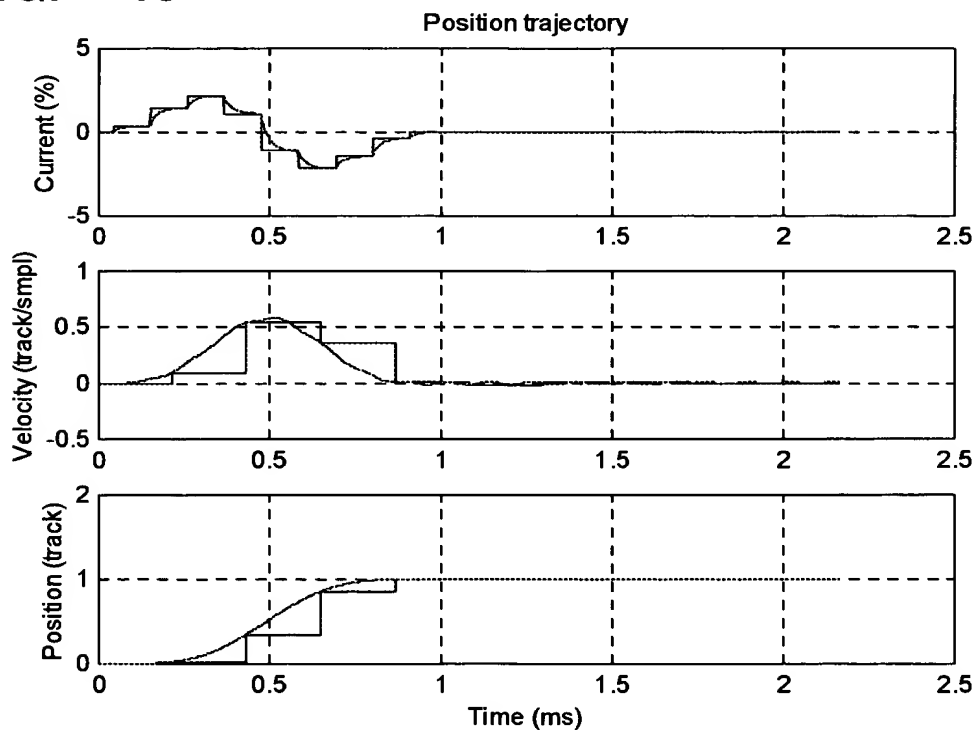


FIG. 48

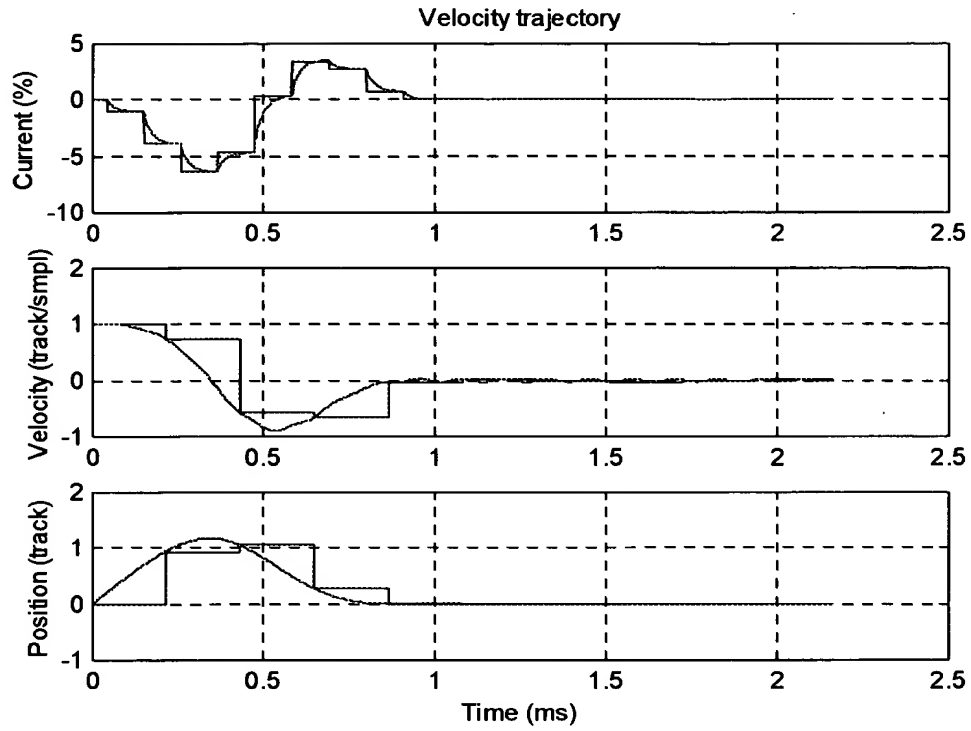


009TTF-8/SET 260

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

HEAD POSITIONING CONTROL METHOD...
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 41 of 47

FIG. 49

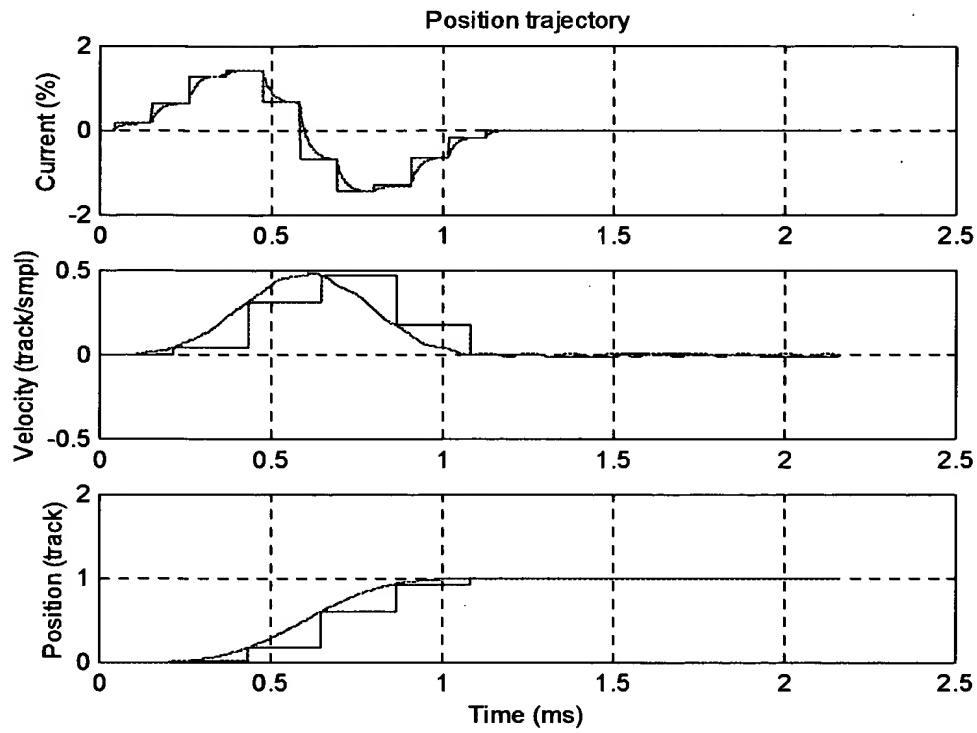


009FF" 875ET 760

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

HEAD POSITIONING CONTROL METHOD
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 42 of 47

FIG. 50



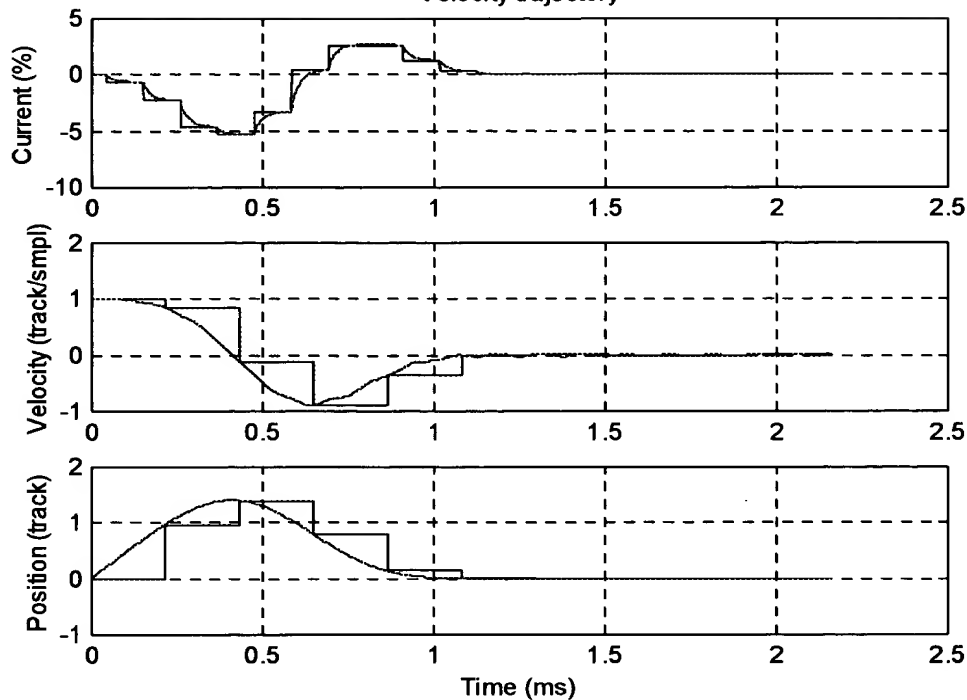
009111 8/557/60

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

HEAD POSITIONING CONTROL METHOD...
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 43 of 47

FIG. 51

Velocity trajectory

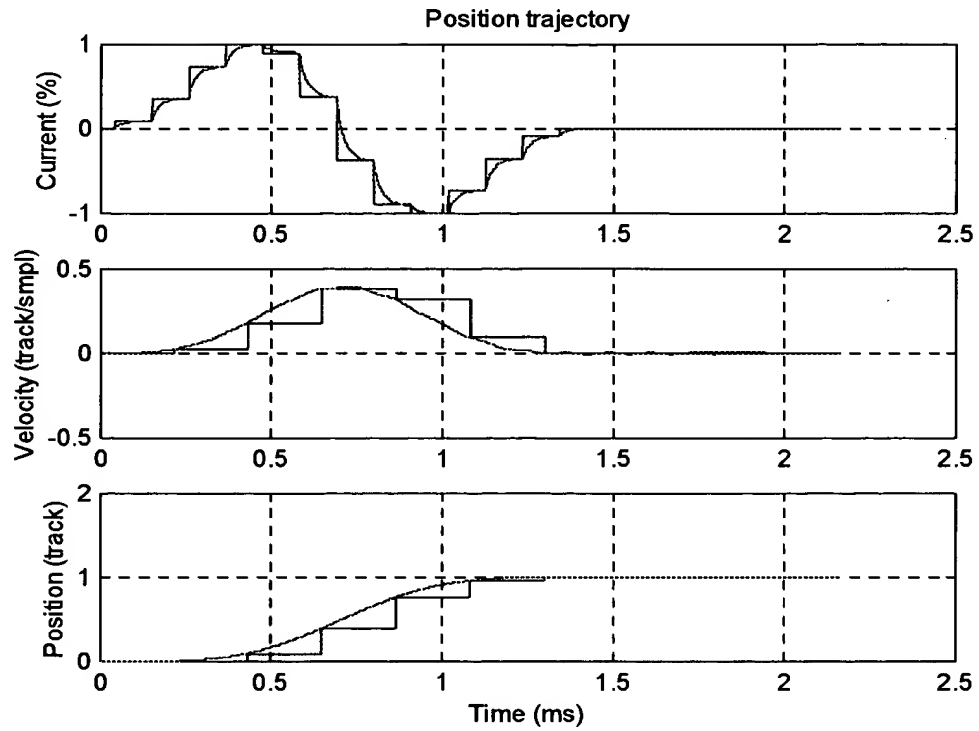


009TFT" 8/55T/60

APPROVED	O.G. FG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

HEAD POSITIONING CONTROL METHOD...
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 44 of 47

FIG. 52



009111" 8/5ET/60

FIG. 53

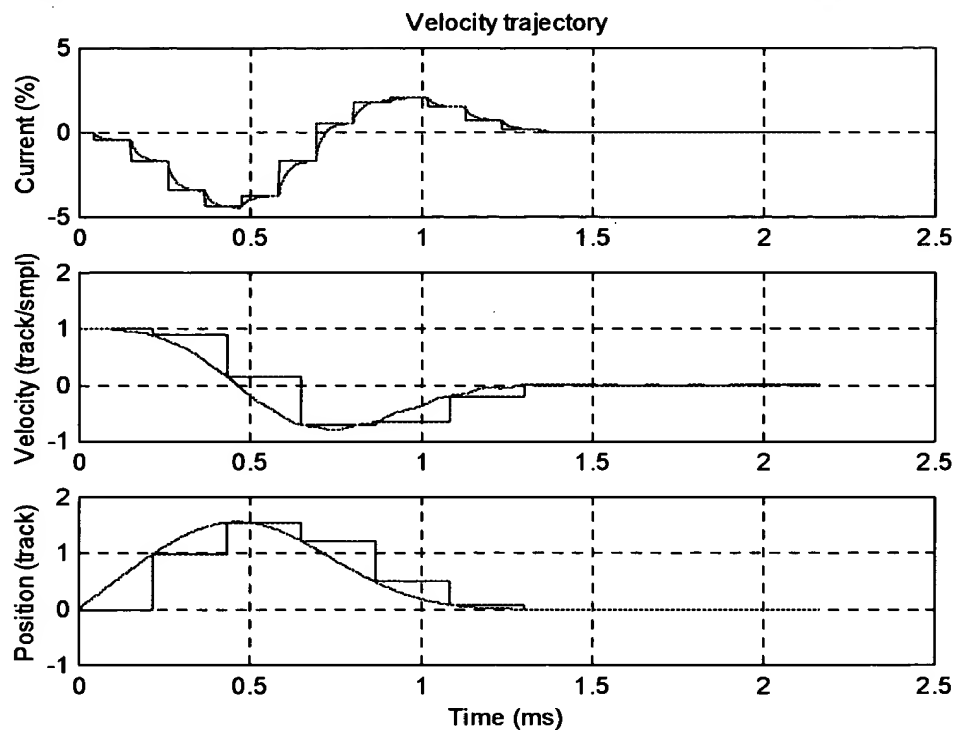
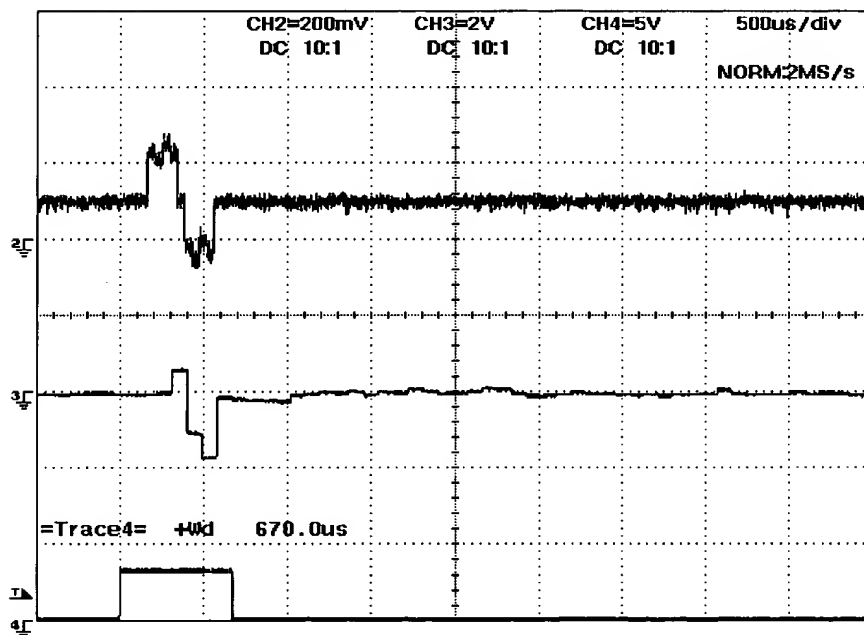


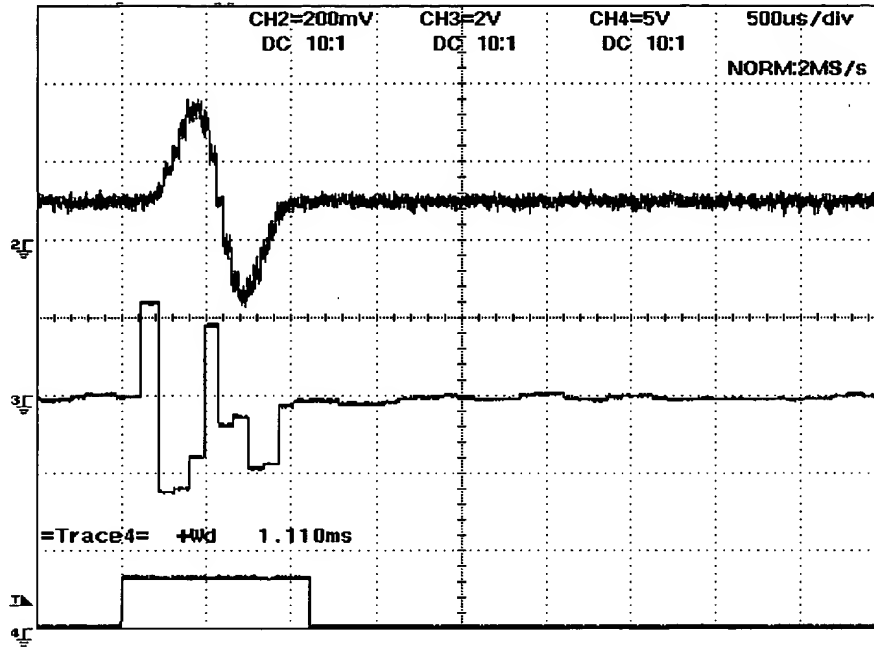
FIG. 54



009111 8752760

HEAD POSITIONING CONTROL MOD...
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408.64941
 (312) 360 0080
 Sheet 46 of 47

FIG. 55



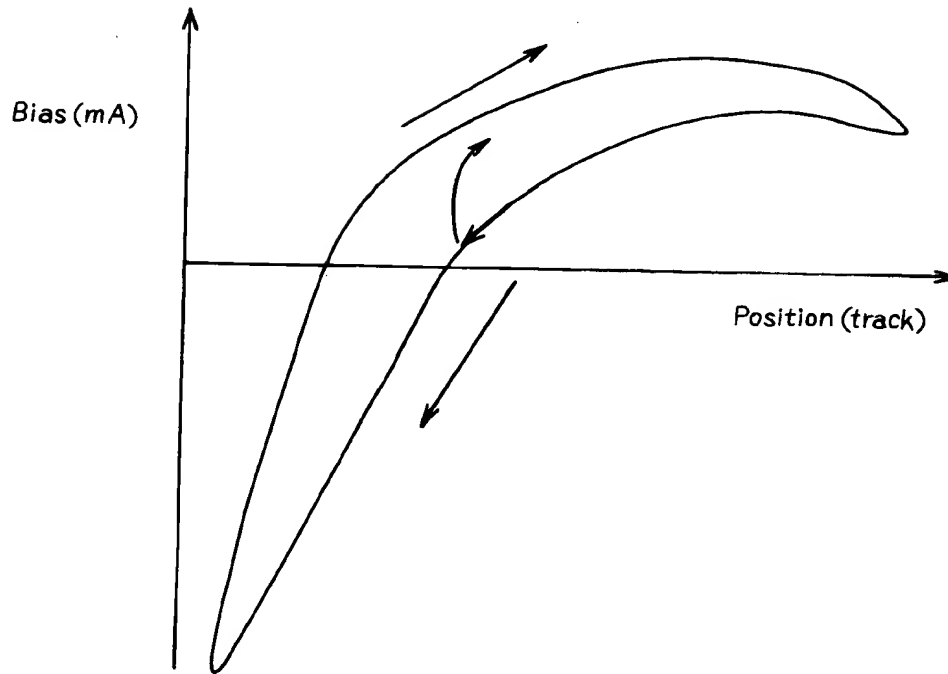
09713578-111600

APPROVED	D.G. FG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

HEAD POSITIONING CONTROL METHOD
 Kazuhiko Takaishi
 Greer, Burns & Crain, Ltd. (James Folker)
 Ref. No. 3408,64941
 (312) 360 0080
 Sheet 47 of 47

FIG. 56

Prior art



009111 8/5ET/60